

Search history

Gitomer 10_729854

10/14/2005

=> d his full

(FILE 'HOME' ENTERED AT 11:56:54 ON 14 OCT 2005)

FILE 'CAPLUS' ENTERED AT 11:57:22 ON 14 OCT 2005

E US2003-729854/APPS

L1 1 SEA ABB=ON PLU=ON (US2003-729854/AP OR US2003-729854/PRN)
D IALL L1

FILE 'STNGUIDE' ENTERED AT 11:59:09 ON 14 OCT 2005

FILE 'CAPLUS' ENTERED AT 11:59:41 ON 14 OCT 2005

E NANOTUBES+ALL/CT

L2 20680 SEA ABB=ON PLU=ON NANOTUBES+NT/CT
E E8+ALL

FILE 'ZCAPLUS' ENTERED AT 12:07:56 ON 14 OCT 2005

E MICROELECTRODES+ALL/CT

E GLUCOSE SENSORS+NT/CT

E GLUCOSE SENSORS+ALL/CT

E E15+ALL

E E7+ALL

FILE 'CAPLUS' ENTERED AT 12:18:52 ON 14 OCT 2005

FILE 'HCAPLUS' ENTERED AT 12:19:57 ON 14 OCT 2005

L3 20680 SEA ABB=ON PLU=ON NANOTUBES+NT/CT
L4 2884 SEA ABB=ON PLU=ON MICROELECTRODES+NT/CT
L5 4758 SEA ABB=ON PLU=ON ENZYME ELECTRODES+NT/CT
L6 2046 SEA ABB=ON PLU=ON GLUCOSE SENSORS+OLD/CT
L7 9463 SEA ABB=ON PLU=ON GLUCOSE OXIDASE/CT
L8 60 SEA ABB=ON PLU=ON L3 AND L4
L9 57 SEA ABB=ON PLU=ON L3 AND L5
L10 22 SEA ABB=ON PLU=ON L3 AND L6
L11 60 SEA ABB=ON PLU=ON L3 AND L7
L12 139 SEA ABB=ON PLU=ON (L8 OR L9 OR L10 OR L11)
L13 258565 SEA ABB=ON PLU=ON GLUCOS?/OBI
L14 3349 SEA ABB=ON PLU=ON OXIDATION/OBI (2A) GLUCOSE/OBI
L15 0 SEA ABB=ON PLU=ON L8 AND L14
L16 4 SEA ABB=ON PLU=ON L13 AND L8
D SCA
L17 22 SEA ABB=ON PLU=ON L3 AND L6
D SCA

FILE 'STNGUIDE' ENTERED AT 12:32:19 ON 14 OCT 2005

FILE 'HCAPLUS' ENTERED AT 12:35:32 ON 14 OCT 2005

L18 3 SEA ABB=ON PLU=ON L8 AND L7
L19 0 SEA ABB=ON PLU=ON L18 NOT L16
L20 20 SEA ABB=ON PLU=ON L17 NOT L16
D SCA

FILE 'STNGUIDE' ENTERED AT 12:38:22 ON 14 OCT 2005

FILE 'HCAPLUS' ENTERED AT 12:41:23 ON 14 OCT 2005

L21 57 SEA ABB=ON PLU=ON L3 AND L5
L22 37 SEA ABB=ON PLU=ON L3 AND L5 AND L13
L23 14 SEA ABB=ON PLU=ON L22 NOT (L16 OR L17)

FILE 'STNGUIDE' ENTERED AT 12:45:04 ON 14 OCT 2005

FILE 'HCAPLUS' ENTERED AT 12:47:22 ON 14 OCT 2005

L24 22 SEA ABB=ON PLU=ON L3 AND L6 AND L5
L25 22 SEA ABB=ON PLU=ON L3 AND L6 AND L5 AND L13
L26 19 SEA ABB=ON PLU=ON L3 AND L6 AND L5 AND L7
L27 2 SEA ABB=ON PLU=ON L3 AND L6 AND L5 AND L7 AND L4
D SCA
L28 3 SEA ABB=ON PLU=ON L25 NOT L26
D SCA
D SCA L26

FILE 'STNGUIDE' ENTERED AT 12:53:04 ON 14 OCT 2005

FILE 'MEDLINE' ENTERED AT 13:09:48 ON 14 OCT 2005

L29 391 SEA ABB=ON PLU=ON NANOTUBES, CARBON/CT
L30 9350 SEA ABB=ON PLU=ON MICROELECTRODES/CT
L31 507 SEA ABB=ON PLU=ON ION-SELECTIVE ELECTRODES/CT
L32 6401 SEA ABB=ON PLU=ON BIOSENSING TECHNIQUES/CT
L33 2418 SEA ABB=ON PLU=ON GLUCOSE OXIDASE/CT
L34 92126 SEA ABB=ON PLU=ON GLUCOSE/CT
L35 317012 SEA ABB=ON PLU=ON GLUCOS?
L36 10 SEA ABB=ON PLU=ON L29 AND L30
L37 1 SEA ABB=ON PLU=ON L29 AND L31
L38 11 SEA ABB=ON PLU=ON L36 OR L37
L39 1 SEA ABB=ON PLU=ON L38 AND L35
D TRIAL
D TRIAL L38 1-11

FILE 'STNGUIDE' ENTERED AT 13:14:13 ON 14 OCT 2005

FILE 'MEDLINE' ENTERED AT 13:17:53 ON 14 OCT 2005

L40 40 SEA ABB=ON PLU=ON L29 AND L32
L41 9 SEA ABB=ON PLU=ON L40 AND L35
D TRIAL 1-9

FILE 'STNGUIDE' ENTERED AT 13:18:37 ON 14 OCT 2005

L*** DEL 0 S ELECTROCHEMISTRY/CT

FILE 'MEDLINE' ENTERED AT 13:21:02 ON 14 OCT 2005

L42 17523 SEA ABB=ON PLU=ON ELECTROCHEMISTRY/CT
L43 6 SEA ABB=ON PLU=ON L41 AND L42
D TRIAL 1-6
L44 6 SEA ABB=ON PLU=ON L29 AND L42 AND L33
L45 1 SEA ABB=ON PLU=ON L43 NOT L44
L46 1 SEA ABB=ON PLU=ON L44 NOT L43
D TRIAL
L47 8 SEA ABB=ON PLU=ON L29 AND L33
D TRIAL 1-8
L48 2 SEA ABB=ON PLU=ON L47 NOT (L39 OR L43 OR L44)
D TRIAL 1-2

FILE 'HCAPLUS' ENTERED AT 13:29:18 ON 14 OCT 2005

L49 21 SEA ABB=ON PLU=ON L16 OR L18 OR L27 OR L26

FILE 'MEDLINE' ENTERED AT 13:29:49 ON 14 OCT 2005

L50 8 SEA ABB=ON PLU=ON L39 OR L43 OR L44

FILE 'HCAPLUS, MEDLINE' ENTERED AT 13:30:15 ON 14 OCT 2005

L51 28 DUP REM L49 L50 (1 DUPLICATE REMOVED)
ANSWERS '1-21' FROM FILE HCAPLUS

ANSWERS '22-28' FROM FILE MEDLINE

FILE 'STNGUIDE' ENTERED AT 13:30:34 ON 14 OCT 2005

FILE 'EMBASE' ENTERED AT 13:30:52 ON 14 OCT 2005

FILE 'STNGUIDE' ENTERED AT 13:30:56 ON 14 OCT 2005

FILE 'EMBASE' ENTERED AT 13:31:02 ON 14 OCT 2005

E NANOTUBE/CT
 E NANOTUBE+ALL/CT
 E MICROELECTRODE+ALL/CT
 E ELECTRODE+ALL/CT
 E BIOSENSING TECHNIQUE/CT
 E E4+ALL
 E BIOSENSOR+ALL/CT
 E E5+ALL
 E GLUCOSE OXIDASE/CT
 E E3+ALL
 E GLUCOSE+ALL/CT

L52 319 SEA ABB=ON PLU=ON NANOTUBE/CT
 L53 4131 SEA ABB=ON PLU=ON MICROELECTRODE/CT
 L*** DEL 0 S ION-SELECTIVE ELECTRODE/CT
 E ION-SELECTIVE ELECTRODE/CT
 E E4+ALL
 L54 1402 SEA ABB=ON PLU=ON ION SELECTIVE ELECTRODE/CT
 L55 506 SEA ABB=ON PLU=ON ENZYME ELECTRODE/CT
 L56 324 SEA ABB=ON PLU=ON AMPEROMETRIC BIOSENSOR/CT
 L57 162 SEA ABB=ON PLU=ON ENZYMIC BIOSENSOR/CT
 L58 2025 SEA ABB=ON PLU=ON GLUCOSE OXIDASE/CT
 L59 99852 SEA ABB=ON PLU=ON GLUCOSE/CT
 L60 259838 SEA ABB=ON PLU=ON GLUCOS?
 L61 3 SEA ABB=ON PLU=ON L52 AND L53
 D TRIAL 1-3
 L62 0 SEA ABB=ON PLU=ON L52 AND L54
 L63 0 SEA ABB=ON PLU=ON L52 AND L55
 L64 3 SEA ABB=ON PLU=ON L52 AND L56
 D TRIAL 1-3
 L65 2 SEA ABB=ON PLU=ON L52 AND L56 AND L60
 D TRIAL 1-2
 L66 1 SEA ABB=ON PLU=ON L65 AND SCANNING
 L67 0 SEA ABB=ON PLU=ON L52 AND L57
 L68 2 SEA ABB=ON PLU=ON L52 AND L58
 D TRIAL 1-2
 D TRIAL L66
 L69 56494 SEA ABB=ON PLU=ON ELECTRODE
 L70 36 SEA ABB=ON PLU=ON L52 AND L69
 L71 3 SEA ABB=ON PLU=ON L70 AND L60
 D TRIAL 1-3

FILE 'BIOSIS' ENTERED AT 13:48:49 ON 14 OCT 2005

INDEX '1MOBILITY, 2MOBILITY, ABI-INFORM, ADISCTI, AEROSPACE, AGRICOLA,
 ALUMINIUM, ANABSTR, ANTE, APOLLIT, AQUALINE, AQUASCI, AQUIRE, BABS,
 BIBLIODATA, BIOBUSINESS, BIOCOMMERCE, BIOENG, BIOSIS, BIOTECHABS,
 BIOTECHDS, BIOTECHNO, BLDB, CABA, CANCERLIT, ...' ENTERED AT 13:49:25 ON
 14 OCT 2005

SEA NANOTUBE

7 FILE 1MOBILITY

325 FILE ABI-INFORM
1254 FILE AEROSPACE
8 FILE AGRICOLA
38 FILE ALUMINIUM
245 FILE ANABSTR
119 FILE ANTE
558 FILE APOLLIT
4 FILE AQUALINE
1 FILE AQUASCI
1047 FILE BABS
5 FILE BIBLIODATA
3 FILE BIOBUSINESS
1 FILE BIOCOMMERCE
75 FILE BIOENG
411 FILE BIOSIS
134 FILE BIOTECHABS
134 FILE BIOTECHDS
65 FILE BIOTECHNO
22 FILE CABA
5 FILE CANCERLIT
24421 FILE CAPLUS
104 FILE CASREACT
267 FILE CBNB
652 FILE CEABA-VTB
192 FILE CEN
260 FILE CERAB
3 FILE CHEMINFORMRX
139 FILE CIN
28 FILE CIVILENG
11052 FILE COMPENDEX
65 FILE COMPUAB
2 FILE COMPUSCIENCE
282 FILE CONFSCI
18 FILE COPPERLIT
20 FILE CORROSION
1 FILE CROPU
18 FILE CSNB
7 FILE DDFU
700 FILE DGENE
439 FILE DISSABS
4 FILE DKF
834 FILE DPCI
7 FILE DRUGU
536 FILE ELCOM
1487 FILE EMA
57 FILE EMBAL
1140 FILE EMBASE
558 FILE ENCOMPLIT
819 FILE ENCOMPPAT
1345 FILE ENERGY
248 FILE ENTEC
13 FILE ENVIROENG
1107 FILE EPFULL
857 FILE ESBIODBASE
61 FILE FRANCEPAT
121 FILE FRFULL
10 FILE FROSTI
8 FILE FSTA
59 FILE GBFULL
12 FILE GENBANK

11 FILE GEOREF
4 FILE HEALSAFE
7 FILE ICONDA
2698 FILE IFIPAT
864 FILE INIS
3583 FILE INPADOC
12415 FILE INSPEC
2 FILE INSPHYS
74 FILE INVESTEXT
90 FILE IPA
1 FILE ITRD
1188 FILE JAPIO
3751 FILE JICST-EPLUS
243 FILE KOREAPAT
4 FILE KOSMET
52 FILE LIFESCI
3 FILE LISA
209 FILE MATBUS
28 FILE MATH
230 FILE MECHENG
2296 FILE MEDLINE
334 FILE METADEX
884 FILE NLDB
367 FILE NTIS
1 FILE OCEAN
63 FILE PAPERCHEM2
10138 FILE PASCAL
6 FILE PATDPA
64 FILE PATDPAFULL
2241 FILE PCTFULL
2 FILE PHARMAML
4 FILE PHIC
17 FILE PHIN
264 FILE PIRA
6 FILE POLLUAB
1541 FILE PROMT
767 FILE RAPRA
4 FILE RUSSIAPAT
19333 FILE SCISEARCH
900 FILE SOLIDSTATE
2624 FILE TEMA
65 FILE TEXTILETECH
596 FILE TOXCENTER
42 FILE TRIBO
5 FILE TULSA
2 FILE TULSA2
4603 FILE USPATFULL
871 FILE USPAT2
4 FILE WATER
3471 FILE WPIDS
165 FILE WPIFV
3471 FILE WPINDEX
81 FILE WSCA
212 FILE WTEXTILES

L72 QUE ABB=ON PLU=ON NANOTUBE

SEA NANOTUBE AND GLUCOSE

4 FILE ABI-INFORM
1 FILE AEROSPACE

27 FILE ANABSTR
4 FILE APOLLIT
2 FILE BABS
6 FILE BIOENG
22 FILE BIOSIS
19 FILE BIOTECHABS
19 FILE BIOTECHDS
6 FILE BIOTECHNO
5 FILE CABA
117 FILE CAPLUS
3 FILE CASREACT
2 FILE CBNB
11 FILE CEABA-VTB
7 FILE CEN
1 FILE CERAB
54 FILE COMPENDEX
2 FILE COMPUAB
1 FILE CONFSCI
1 FILE COPPERLIT
5 FILE DISSABS
1 FILE DPCI
1 FILE DRUGU
2 FILE ELCOM
4 FILE EMA
2 FILE EMBAL
29 FILE EMBASE
1 FILE ENCOMPPAT
5 FILE ENERGY
29 FILE EPFULL
18 FILE ESBIODBASE
8 FILE FRFULL
5 FILE FSTA
29 FILE IFIPAT
4 FILE INPADOC
21 FILE INSPEC
10 FILE JICST-EPLUS
1 FILE KOREAPAT
37 FILE MEDLINE
6 FILE NLDB
1 FILE PAPERCHEM2
37 FILE PASCAL
1 FILE PATDPAFULL
184 FILE PCTFULL
1 FILE PIRA
8 FILE PROMT
5 FILE RAPRA
113 FILE SCISEARCH
2 FILE SOLIDSTATE
14 FILE TEMA
11 FILE TOXCENTER
296 FILE USPATFULL
19 FILE USPAT2
24 FILE WPIDS
1 FILE WPIFV
24 FILE WPINDEX
1 FILE WTEXTILES

L73

QUE ABB=ON PLU=ON NANOTUBE AND GLUCOSE

FILE 'PASCAL, INSPEC, BIOSIS, BIOTECHDS, ANABSTR, SCISEARCH' ENTERED AT

13:57:34 ON 14 OCT 2005

L74 43086 SEA ABB=ON PLU=ON NANOTUB?
 L75 731415 SEA ABB=ON PLU=ON GLUCOS?
 L76 17712 SEA ABB=ON PLU=ON GLUCOSE OXIDASE
 L77 656483 SEA ABB=ON PLU=ON MICROELECTROD? OR ELECTROD?
 L78 52472 SEA ABB=ON PLU=ON BIOSENS?
 L79 165 SEA ABB=ON PLU=ON L74 AND L76
 L80 132 SEA ABB=ON PLU=ON L79 AND L77
 L81 107 SEA ABB=ON PLU=ON L80 AND L78
 L82 809921 SEA ABB=ON PLU=ON HYDROGEN
 L83 1503024 SEA ABB=ON PLU=ON GAS
 L84 40 SEA ABB=ON PLU=ON L81 AND L82
 L85 1 SEA ABB=ON PLU=ON L84 AND L83
 D TRIAL
 L86 12390 SEA ABB=ON PLU=ON SENS? (2A) GLUCOS?
 L87 75 SEA ABB=ON PLU=ON L74 AND L86
 L88 60 SEA ABB=ON PLU=ON L87 AND L77
 L89 25 SEA ABB=ON PLU=ON L84 AND L86
 L90 25 SEA ABB=ON PLU=ON L89 AND L78
 D KWIC L90 1-5
 L91 8929 SEA ABB=ON PLU=ON HYDROGEN GAS
 L92 197 SEA ABB=ON PLU=ON L74 AND L91
 L93 1 SEA ABB=ON PLU=ON L92 AND L76
 L94 1 SEA ABB=ON PLU=ON L92 AND L75
 L95 4050 SEA ABB=ON PLU=ON L74 AND L77
 L96 267 SEA ABB=ON PLU=ON L74 AND L75
 L97 183 SEA ABB=ON PLU=ON L96 AND L77
 L98 2 SEA ABB=ON PLU=ON L80 AND L83
 D KWIC 1-2
 L99 43 SEA ABB=ON PLU=ON L80 AND L82
 L100 25 SEA ABB=ON PLU=ON L99 AND L86

FILE 'STNGUIDE' ENTERED AT 14:15:19 ON 14 OCT 2005

 FILE 'HCAPLUS, PASCAL, INSPEC, BIOSIS, BIOTECHDS, ANABSTR, SCISEARCH'
 ENTERED AT 14:15:31 ON 14 OCT 2005

L101 25 DUP REM L26 L100 (19 DUPLICATES REMOVED)
 ANSWERS '1-19' FROM FILE HCAPLUS
 ANSWERS '20-22' FROM FILE PASCAL
 ANSWERS '23-24' FROM FILE BIOSIS
 ANSWER '25' FROM FILE SCISEARCH

FILE 'HCAPLUS' ENTERED AT 14:17:14 ON 14 OCT 2005

E LEE JU/AU
 E LEE JUN/AU
 E LEE JUNG/AU
 L102 65 SEA ABB=ON PLU=ON LEE JUNG HOON/AU
 E CHUNG JA/AU
 E CHUNG J/AU
 E CHUNG J?/AU
 L103 2991 SEA ABB=ON PLU=ON CHUNG J?/AU
 E LEE KY/AU
 E LEE KYO/AU
 L104 4940 SEA ABB=ON PLU=ON LEE KY?/AU
 L105 0 SEA ABB=ON PLU=ON L102 AND L103 AND L104
 L106 16 S LEE J?
 L106 43005 SEA ABB=ON PLU=ON LEE J?/AU
 L107 12 SEA ABB=ON PLU=ON L103 AND L104 AND L106

FILE 'MEDLINE' ENTERED AT 14:22:21 ON 14 OCT 2005

L108 15800 SEA ABB=ON PLU=ON LEE J?/AU
L109 1822 SEA ABB=ON PLU=ON CHUNG J?/AU
L110 1054 SEA ABB=ON PLU=ON LEE KY?/AU
L111 3 SEA ABB=ON PLU=ON L108 AND L109 AND L110

FILE 'EMBASE' ENTERED AT 14:23:21 ON 14 OCT 2005

L112 1 SEA ABB=ON PLU=ON LEE KY?/AU
L113 1554 SEA ABB=ON PLU=ON CHUNG J?/AU
L114 13605 SEA ABB=ON PLU=ON LEE J?/AU
L115 143 SEA ABB=ON PLU=ON L113 AND L114
L116 0 SEA ABB=ON PLU=ON L113 AND L114 AND L112

FILE 'HCAPLUS' ENTERED AT 14:25:11 ON 14 OCT 2005
D SCA TI L107

FILE 'STNGUIDE' ENTERED AT 14:27:50 ON 14 OCT 2005

FILE 'PASCAL, INSPEC, BIOSIS, BIOTECHDS, ANABSTR, SCISEARCH' ENTERED AT
14:29:03 ON 14 OCT 2005

L117 8901 SEA ABB=ON PLU=ON CHUNG J?/AU
L118 89770 SEA ABB=ON PLU=ON LEE J?/AU
L119 2990 SEA ABB=ON PLU=ON LEE KY?/AU
L120 3 SEA ABB=ON PLU=ON L117 AND L118 AND L119

FILE 'STNGUIDE' ENTERED AT 14:30:11 ON 14 OCT 2005

FILE 'HCAPLUS' ENTERED AT 14:34:26 ON 14 OCT 2005
D QUE L107

FILE 'MEDLINE' ENTERED AT 14:34:28 ON 14 OCT 2005
D QUE L111

FILE 'EMBASE' ENTERED AT 14:34:30 ON 14 OCT 2005
D QUE L116

FILE 'PASCAL, INSPEC, BIOSIS, BIOTECHDS, ANABSTR, SCISEARCH' ENTERED AT
14:34:31 ON 14 OCT 2005
D QUE L120

FILE 'STNGUIDE' ENTERED AT 14:34:50 ON 14 OCT 2005

L121 FILE 'HCAPLUS, MEDLINE, BIOSIS' ENTERED AT 14:36:35 ON 14 OCT 2005
15 DUP REM L107 L111 L116 L120 (3 DUPLICATES REMOVED)
ANSWERS '1-12' FROM FILE HCAPLUS
ANSWERS '13-14' FROM FILE MEDLINE
ANSWER '15' FROM FILE BIOSIS
D IBIB ABS HITIND L121 1-12
D IALL L121 13-15

FILE 'STNGUIDE' ENTERED AT 14:38:07 ON 14 OCT 2005

FILE 'HCAPLUS' ENTERED AT 14:43:08 ON 14 OCT 2005
D QUE L16
D QUE L18
D QUE L26
D QUE L27

L122 19 SEA ABB=ON PLU=ON (L16 OR L18 OR L26 OR L27) NOT L107

FILE 'MEDLINE' ENTERED AT 14:43:15 ON 14 OCT 2005
D QUE L39

L123 D QUE L43
D QUE L44
8 SEA ABB=ON PLU=ON (L39 OR L43 OR L44) NOT L111

FILE 'EMBASE' ENTERED AT 14:43:18 ON 14 OCT 2005

L124 D QUE L66
1 SEA ABB=ON PLU=ON L66 NOT L116

FILE 'PASCAL, INSPEC, BIOSIS, BIOTECHDS, ANABSTR, SCISEARCH' ENTERED AT 14:43:20 ON 14 OCT 2005

L125 D QUE L94
D QUE L98
D QUE L100
26 SEA ABB=ON PLU=ON (L94 OR L98 OR L100)

FILE 'STNGUIDE' ENTERED AT 14:45:19 ON 14 OCT 2005

L126 FILE 'HCAPLUS, MEDLINE, EMBASE, PASCAL, INSPEC, BIOSIS, BIOTECHDS, ANABSTR, SCISEARCH' ENTERED AT 14:46:20 ON 14 OCT 2005
31 DUP REM L122 L123 L124 L125 (23 DUPLICATES REMOVED)
ANSWERS '1-19' FROM FILE HCAPLUS
ANSWERS '20-26' FROM FILE MEDLINE
ANSWER '27' FROM FILE EMBASE
ANSWER '28' FROM FILE PASCAL
ANSWER '29' FROM FILE BIOTECHDS
ANSWERS '30-31' FROM FILE SCISEARCH
D IBIB ABS HITIND L126 1-19
D IALL L126 20-31

FILE HOME

FILE CAPLUS

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FILE COVERS 1907 - 14 Oct 2005 VOL 143 ISS 17
FILE LAST UPDATED: 13 Oct 2005 (20051013/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

<http://www.cas.org/infopolicy.html>

FILE STNGUIDE
FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Oct 7, 2005 (20051007/UP).

FILE ZCAPLUS

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FILE LAST UPDATED: 13 Oct 2005 (20051013/ED)

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FILE MEDLINE

FILE LAST UPDATED: 13 OCT 2005 (20051013/UP). FILE COVERS 1950 TO DATE.

On December 19, 2004, the 2005 MeSH terms were loaded.

The MEDLINE reload for 2005 is now available. For details enter HELP RLOAD at an arrow prompt (=>). See also:

<http://www.nlm.nih.gov/mesh/>

http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

OLDMEDLINE now back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE EMBASE

FILE COVERS 1974 TO 13 Oct 2005 (20051013/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE BIOSIS

FILE COVERS 1969 TO DATE.

CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNS) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 12 October 2005 (20051012/ED)

FILE RELOADED: 19 October 2003.

FILE STNINDEX

FILE PASCAL

FILE LAST UPDATED: 10 OCT 2005 <20051010/UP>

FILE COVERS 1977 TO DATE.

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION IS AVAILABLE
IN THE BASIC INDEX (/BI) FIELD <<<

FILE INSPEC

FILE LAST UPDATED: 10 OCT 2005 <20051010/UP>

FILE COVERS 1969 TO DATE.

<<< SIMULTANEOUS LEFT AND RIGHT TRUNCATION AVAILABLE IN
THE BASIC INDEX >>>

FILE BIOTECHDS

FILE LAST UPDATED: 12 OCT 2005 <20051012/UP>

>>> USE OF THIS FILE IS LIMITED TO BIOTECH SUBSCRIBERS <<<

>>> NEW CLASSIFICATION SYSTEM FROM 2002 ONWARDS - SEE HELP CLA <<<

>>> NEW DISPLAY FIELDS LS AND LS2 (LEGAL STATUS DATA FROM
THE INPADOC DATABASE) AVAILABLE - SEE NEWS <<<

FILE ANABSTR

FILE LAST UPDATED: 11 OCT 2005 <20051011/UP>

FILE COVERS 1980 TO DATE.

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION IS AVAILABLE IN
THE BASIC INDEX (/BI) AND CHEMICAL NAME (/CN) FIELDS <<<

FILE SCISEARCH

FILE COVERS 1974 TO 13 Oct 2005 (20051013/ED)

SCISEARCH has been reloaded, see HELP RLOAD for details.

=>

=> file hcaplus

FILE 'HCAPLUS' ENTERED AT 14:34:26 ON 14 OCT 2005

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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FILE COVERS 1907 - 14 Oct 2005 VOL 143 ISS 17

FILE LAST UPDATED: 13 Oct 2005 (20051013/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> d que L107

L103	2991	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	CHUNG J?/AU
L104	4940	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	LEE KY?/AU
L106	43005	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	LEE J?/AU
L107	12	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L103 AND L104 AND L106

AUTHOR
Search

=> file medline

FILE 'MEDLINE' ENTERED AT 14:34:28 ON 14 OCT 2005

FILE LAST UPDATED: 13 OCT 2005 (20051013/UP). FILE COVERS 1950 TO DATE.

On December 19, 2004, the 2005 MeSH terms were loaded.

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<http://www.nlm.nih.gov/mesh/>
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

OLDMEDLINE now back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary.

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=> d que L111

L108	15800	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	LEE J?/AU
L109	1822	SEA	FILE=MEDLINE	ABB=ON	PLU=ON	CHUNG J?/AU

L110 1054 SEA FILE=MEDLINE ABB=ON PLU=ON LEE KY?/AU
L111 3 SEA FILE=MEDLINE ABB=ON PLU=ON L108 AND L109 AND L110

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=> d que L116

L112 1 SEA FILE=EMBASE ABB=ON PLU=ON LEE KY?/AU
L113 1554 SEA FILE=EMBASE ABB=ON PLU=ON CHUNG J?/AU
L114 13605 SEA FILE=EMBASE ABB=ON PLU=ON LEE J?/AU
L116 0 SEA FILE=EMBASE ABB=ON PLU=ON L113 AND L114 AND L112

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=> d que L120

L117 8901 SEA CHUNG J?/AU
L118 89770 SEA LEE J?/AU
L119 2990 SEA LEE KY?/AU
L120 3 SEA L117 AND L118 AND L119

=> => dup rem L107 L111 L116 L120

L116 HAS NO ANSWERS

FILE 'HCAPLUS' ENTERED AT 14:36:35 ON 14 OCT 2005

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FILE 'BIOSIS' ENTERED AT 14:36:35 ON 14 OCT 2005

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PROCESSING COMPLETED FOR L107

PROCESSING COMPLETED FOR L111

PROCESSING COMPLETED FOR L116

PROCESSING COMPLETED FOR L120

L121 15 DUP REM L107 L111 L116 L120 (3 DUPLICATES REMOVED)

ANSWERS '1-12' FROM FILE HCAPLUS

ANSWERS '13-14' FROM FILE MEDLINE

ANSWER '15' FROM FILE BIOSIS

=> d ibib abs hitind L121 1-12; d iall L121 13-15

L121 ANSWER 1 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1

ACCESSION NUMBER: 2005:101567 HCAPLUS

DOCUMENT NUMBER: 142:254236

TITLE: Antiplatelet activity of J78 (2-chloro-3-[2'-bromo, 4'-fluoro-phenyl]-amino-8-hydroxy-1,4-naphthoquinone), an antithrombotic agent, is mediated by thromboxane (TX) A2 receptor blockade with TXA2 synthase inhibition and suppression of cytosolic Ca²⁺ mobilization

AUTHOR(S): Jin, Yong-Ri; Cho, Mi-Ra; Ryu, Chung-Kyu; **Chung, Jin-Ho**; Yuk, Dong-Yeon; Hong, Jin-Tae; **Lee, Kyung-Sup**; **Lee, Jung-Jin**; Lee, Mi-Yea; Lim, Yong; Yun, Yeo-Pyo

CORPORATE SOURCE: College of Pharmacy, Chungbuk National University, Cheongju, S. Korea

SOURCE: Journal of Pharmacology and Experimental Therapeutics (2005), 312(1), 214-219
CODEN: JPETAB; ISSN: 0022-3565

PUBLISHER: American Society for Pharmacology and Experimental Therapeutics

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We previously reported that J78 (2-chloro-3-[2'-bromo, 4'-fluoro-phenyl]-amino-8-hydroxy-1,4-naphthoquinone), a newly synthesized 1,4-naphthoquinone derivative, exhibited a potent antithrombotic effect, which might be due to antiplatelet rather than anticoagulation activity. In the present study, possible antiplatelet mechanism of J78 was investigated. J78 concentration-dependently inhibited rabbit platelet aggregation induced by collagen (10 µg/mL), thrombin (0.05 U/mL), arachidonic acid (100 µM), and U46619 (9,11-dideoxy-9,11-methanoepoxy-prostaglandin F₂; 1 µM), a thromboxane (TX) A₂ mimic, with IC₅₀ values of 0.32±0.01, 0.44±0.02, 0.50±0.04, and 0.36±0.02 µM, resp. J78 also produced a shift to the right of the concentration-response curve of U46619, indicating an antagonistic effect on the TXA₂ receptor. J78 concentration-dependently inhibited collagen-induced arachidonic acid liberation.

In addition, J78 potently suppressed TXA₂ formation by platelets that were

exposed to arachidonic acid in a concentration-dependent manner but had no effect

on the production of PGD₂, indicating an inhibitory effect on TXA₂ synthase. This was supported by a TXA₂ synthase activity assay that J78 concentration-dependently inhibited TXB₂ formation converted from PGH₂. Furthermore, J78 was also able to inhibit the [Ca²⁺]_i mobilization induced by collagen or thrombin at such a concentration that completely inhibited platelet aggregation. Taken together, these results suggest that the antiplatelet activity of J78 may be mediated by TXA₂ receptor blockade with TXA₂ synthase inhibition and suppression of cytosolic Ca²⁺ mobilization.

CC 1-8 (Pharmacology)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 2 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:497379 HCAPLUS

DOCUMENT NUMBER: 143:3732

TITLE: Micro/nano-fabricated glucose sensors using single-walled carbon nanotubes

INVENTOR(S): Lee, Junghoon; Chung, Jaehyun; Lee, Kyong-Hoon

PATENT ASSIGNEE(S): S. Korea

SOURCE: U.S. Pat. Appl. Publ., 13 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005124020	A1	20050609	US 2003-729854	20031205
WO 2005066360	A1	20050721	WO 2003-US38679	20031205
W: CA, JP, KR				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				

PRIORITY APPLN. INFO.: US 2003-729854 A 20031205

AB A novel glucose sensor utilizing hydrogen-specific gas sensing capability of single walled carbon nanotubes assembled on microelectrodes. Highly specific glucose sensing was demonstrated using buffered sample solns. with clin. significant concns. The approach enables a simple but powerful bio-sensor reliably operating with a completely new principle, and opens up novel device applications where functional nano-components can be integrated into a bioMEMS device.

IC ICM C12Q001-54

ICS C12M001-34

INCL 435014000; 435287100

CC 9-7 (Biochemical Methods)

L121 ANSWER 3 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:213787 HCAPLUS

DOCUMENT NUMBER: 140:383873

TITLE: Toward large-scale integration of carbon nanotubes

AUTHOR(S): Chung, Jaehyun; Lee, Kyong-Hoon; Lee, Junghoon; Ruoff, Rodney S.

CORPORATE SOURCE: Department of Mechanical Engineering, Northwestern University, Evanston, IL, 60208-3111, USA

SOURCE: Langmuir (2004), 20(8), 3011-3017

CODEN: LANGD5; ISSN: 0743-7463

PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB This paper presents a large-scale assembly method to deposit discrete multiwalled carbon nanotubes (MWCNTs) across gaps present in an electrode array. A parametric study showed that MWCNTs dispersed in a liquid could be deposited to individually span gaps by combining an a.c. and a d.c. elec. field in a given ratio; it was shown that the a.c. field (5 MHz) serves to selectively attract and the d.c. field to guide individual deposition. Repeated trials demonstrated accurate, discrete, and aligned deposition at room temperature with 90% yield over an electrode array having 100 gaps.

CC 76-3 (Electric Phenomena)

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 4 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:14962 HCAPLUS
TITLE: Multi-walled carbon nanotubes experiencing electrical breakdown as gas sensors
AUTHOR(S): Chung, Jaehyun; Lee, Kyong-Hoon;
Lee, Junghoon; Troya, Diego; Schatz, George C.
CORPORATE SOURCE: Mechanical Engineering Department, Northwestern University, Evanston, IL, 60208, USA
SOURCE: Nanotechnology (2004), 15(11), 1596-1602
CODEN: NNOTER; ISSN: 0957-4484
PUBLISHER: Institute of Physics Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new approach to gas sensing using a multi-walled carbon nanotube (MWCNT) subject to elec. breakdown was presented. The elec. resistances of large-diameter MWCNTs were found to decrease in the presence of air after experiencing elec. breakdown, while pristine MWCNTs were not appreciably sensitive. The sensitivity could be controlled by manipulating the level of the elec. breakdown, and larger-diameter MWCNTs showed better sensitivity because they possess more damaged shells that can create more adsorption sites for oxygen mols. It was suggested by theor. calcns. that the oxygen sensitivity might be associated with an oxidized junction that exists between the outer and inner shells of the nanotubes.

CC 57-8 (Ceramics)

Section cross-reference(s): 76

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 5 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:776904 HCAPLUS
DOCUMENT NUMBER: 142:256916
TITLE: Microfabricated glucose sensor based on single-walled carbon nanotubes
AUTHOR(S): Chung, Jaehyun; Lee, Kyong-Hoon;
Lee, Junghoon
CORPORATE SOURCE: Mechanical Engineering Dept., Northwestern University, USA
SOURCE: IEEE International Conference on Micro Electro Mechanical Systems, Technical Digest, 17th, Maastricht, Netherlands, Jan. 25-29, 2004 (2004), 617-620. Institute of Electrical and Electronics Engineers: New York, N. Y.
CODEN: 69FVFS; ISBN: 0-7803-8265-X
DOCUMENT TYPE: Conference
LANGUAGE: English

AB This paper describes a novel glucose sensor that uses the hydrogen-specific gas sensing capability of single walled carbon nanotubes (SWCNTs) assembled on microelectrodes. Highly specific glucose sensing was demonstrated using buffered sample solns. with clin. significant concns. The proposed approach enables a simple but powerful bio-sensor reliably operating with a completely new principle, and opens up novel device applications where functional nano-components are integrated into a bioMEMS device.

CC 9-1 (Biochemical Methods)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 6 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:454017 HCAPLUS

TITLE: Bio/chemical sensing by thin membrane transducers

AUTHOR(S): Rodriguez, Raquel; Chung, Jaehyun; Lee, Kyonghoon; Lee, Junghoon

CORPORATE SOURCE: Mechanical Engineering Department, Northwestern University, Evanston, IL, USA

SOURCE: Micro-Electro-Mechanical Systems (2004), 6, 469-472
CODEN: MSIIYAW; ISSN: 1096-665X

PUBLISHER: American Society of Mechanical Engineers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB This paper reports the successful design, fabrication and testing of thin membrane transducers that can monitor biochem. reactions through chemical-mech. transduction. Two different membrane materials were chosen: Silicon Nitride (Si₃N₄) and polydimethylsiloxane (PDMS). In both configurations, a specific mol. binding event on the surface of the diaphragm causes a deflection detected by the capacitance change across a gap between the membrane and a substrate. Preliminary tests presented in this paper demonstrate in-situ monitoring of the formation of a self assembled monolayer (SAM) and biotin-streptavidin binding. The reported mechanism is the first demonstration of a capacitive chemical sensor using a membrane element.

CC 9 (Biochemical Methods)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 7 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:283641 HCAPLUS

DOCUMENT NUMBER: 142:14247

TITLE: Process technology to improve integration stability for Cu/low-k (SiOC/FSG hybrid) dual-damascene interconnects

AUTHOR(S): Oh, Hyeok-Sang; Hah, SangRok; Chung, JuHyuk; Wee, Young-Jin; Park, Dea-Gun; Lee, Jung-Woo; Kang, Ki-Ho; Chung, Jin-Sung; Lee, Kyoung-Woo; Lee, Soo-Gun; Song, Won-Sang; Park, Kwang-Myeon

CORPORATE SOURCE: Cu Group (K1), System LSI Division, Samsung Electronics Co., Ltd., Kiheung-Eup Yongin-City, Kyunggi-Do, 449-711, S. Korea

SOURCE: Advanced Metallization Conference 2003, Proceedings of the Conference, Tokyo, Japan, Sept. 29-Oct. 1 and Montreal, QC, Canada, Oct. 21-23, 2003 (2004), Meeting Date 2003, 141-146. Editor(s): Ray, Gary W. Materials Research Society: Warrendale, Pa.
CODEN: 69FFSR; ISBN: 1-55899-757-1

DOCUMENT TYPE: Conference

LANGUAGE: English

AB EM reliability was improved with the advanced technol. in 0.13- μ m node device integrated with FSG/SiOC hybrid low-k dual damascene process. The advanced technol. includes advanced PVD Ta(N) process, SiCN deposition process, and longer NH₃ plasma treatment. The advanced PVD Ta(N) process prevented void from generating by promoting deposition along sidewall of via bottom. SiCN film with moisture barrier property is supposed to block oxygen diffusion and Cu oxidation and to result in good adhesion with Cu. Longer NH₃ plasma treatment improved adhesion between Cu and SiC and decreased stress at Cu/SiC interface. The EM lifetime of samples integrated with advanced processes is improved over 30 yr.

CC 76-3 (Electric Phenomena)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 8 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:519881 HCAPLUS

DOCUMENT NUMBER: 139:171767

TITLE: Nanoscale Gap Fabrication by Carbon Nanotube-Extracted Lithography (CEL)

AUTHOR(S): Chung, Jaehyun; Lee, Kyong-Hoon;
Lee, Junghoon

CORPORATE SOURCE: Mechanical Engineering Department, Northwestern University, Evanston, IL, 60208-3111, USA

SOURCE: Nano Letters (2003), 3(8), 1029-1031

CODEN: NALEFD; ISSN: 1530-6984

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB C nanotube (CNT) -extracted lithog. (CEL) was developed to create high-quality nanoscale gaps defined by the size of CNTs. An individual multiwalled CNT (MWCNT) was deposited across electrodes by the composite elec. field guided assembly method (CEGA) developed previously. After blanket deposition of a metal layer, the MWCNT was removed to obtain a nanoscale gap. The CEL can provide a technique for the mass fabrication of well-defined and precisely positioned nanosized gaps in a reproducible manner.

CC 76-2 (Electric Phenomena)

Section cross-reference(s): 66, 74

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 9 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:385718 HCAPLUS

DOCUMENT NUMBER: 141:91227

TITLE: Multi-walled carbon nanotube sensors

AUTHOR(S): Chung, Jaehyun; Lee, Kyong-Hoon;
Lee, Junghoon

CORPORATE SOURCE: Mechanical Engineering Department, Northwestern University, Evanston, IL, 60208-3111, USA

SOURCE: Transducers '03, International Conference on Solid-State Sensors, Actuators and Microsystems, Digest of Technical Papers, 12th, Boston, MA, United States, June 8-12, 2003 (2003), Volume 1, 718-721.

Institute of Electrical and Electronics Engineers: New York, N. Y.

CODEN: 69FHV2; ISBN: 0-7803-7731-1

DOCUMENT TYPE: Conference

LANGUAGE: English

AB Exptl. results that demonstrate the sensing capability of a multi-walled

carbon nanotube (MWCNT) are presented. A MEMS-based fabrication process was developed to fabricate a device where a single MWCNT was precisely assembled across a gap. The device could be used either as a chemical- or a flow sensor depending on design and fabrication process. A MWCNT that experienced an elec. breakdown sensitively reacted to gaseous environment. A MWCNT suspended by the dry etching of substrate functioned as a phys. sensor to detect N₂ gas flow. Device fabrication process is suitable to the mass production of CNT-based NEMS/MEMS devices.

CC 49-1 (Industrial Inorganic Chemicals)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 10 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:325745 HCAPLUS

DOCUMENT NUMBER: 142:122983

TITLE: CNT extracted lithography

AUTHOR(S): **Chung, Jaehyun; Lee, Kyong-Hoon; Lee, Junghoon**

CORPORATE SOURCE: Department of Mechanical Engineering, Northwestern University, Evanston, IL, 60208-3111, USA

SOURCE: Micro-Electro-Mechanical Systems (2003), 5, 229-232
CODEN: MSYAW; ISSN: 1096-665X

PUBLISHER: American Society of Mechanical Engineers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB High quality nanoscale gaps were fabricated using carbon nanotubes (CNTs) as shadow masks for metal deposition. An elec.-field guided assembly was used to deposit an individual multi-walled CNT (MWCNT) across a pair of electrodes. Metal was then deposited by electron-beam evaporation on the substrate where the MWCNT was assembled. Then, the MWCNT was removed by sonication, leaving a pattern that replicates the shape of the MWCNT. This approach enables the mass fabrication of well-defined nanoscale features aligned and positioned with high accuracy.

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 11 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1994:220773 HCAPLUS

DOCUMENT NUMBER: 120:220773

TITLE: Role of alkali promoters in K/MoS₂ catalysts for CO-H₂ reactions

AUTHOR(S): **Lee, Jae Sung; Kim, Soonho; Lee, Kyung Hee; Nam, In-Sik; Chung, Jong Shik; Kim, Young Gul; Woo, Hee Chul**

CORPORATE SOURCE: Research Center for Catalytic Technology, Pohang University of Science and Technology (POSTECH) and Research Institute of Industrial Science and Technology (RIST), P.O. Box 125, Pohang, 790-600, S. Korea

SOURCE: Applied Catalysis, A: General (1994), 110(1), 11-25
CODEN: ACAGE4; ISSN: 0926-860X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effect of alkali promoters on selectivity of CO-H₂ reactions was studied for K-promoted MoS₂ by employing different K salts and pretreatment conditions (oxidized vs. fresh samples). Promoters assisted either chain growth of hydrocarbon products or alc. formation. A good

correlation was observed between pKa of the conjugate acid of each promoter and its space-time yield of alc. formation. Alc. selective promoters such as K₂CO₃, KOH, and K₂S readily removed their counter anions under the reaction conditions to form a new K complex and spread themselves uniformly over MoS₂. This complex appeared to serve as an active site which adsorbed CO molecularly and, at the same time, covered the majority of the MoS₂ surface which was responsible for dissociative CO adsorption and hydrogenation. Promoters for chain growth such as K₂SO₄ and KCl maintained their initial chemical states throughout the reactions and showed highly nonuniform lateral distributions. Thus, the promoters had a limited coverage over MoS₂, yet modified the electronic state of MoS₂ which interacted directly with CO. Exposure of K₂CO₃- or KOH-promoted MoS₂ to the atmosphere for an extended period oxidized the catalyst and caused segregation of K into the bulk of MoS₂. Thus, the most of MoS₂ surface was exposed, yet modified by K located in the subsurface region of the MoS₂. These modified catalysts promoted hydrocarbon chain growth without forming alcs. The results demonstrated that the distribution of promoter was one of the primary factors determining its role in catalytic CO-H₂ reactions.

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 67

L121 ANSWER 12 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:21830 HCAPLUS

DOCUMENT NUMBER: 118:21830

TITLE: Room-temperature oxidation of dipotassium carbonate/molybdenum disulfide catalysts and its effects on alcohol synthesis from carbon monoxide and hydrogen

AUTHOR(S): Woo, Hee Chul; Nam, In Sik; Lee, Jae Sung; Chung, Jong Shik; Lee, Kyung Hee; Kim, Young Gul

CORPORATE SOURCE: Res. Cent. Catal. Technol., Pohang Inst. Sci. Technol., Pohang, 790-600, S. Korea

SOURCE: Journal of Catalysis (1992), 138(2), 525-35
CODEN: JCTLA5; ISSN: 0021-9517

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Potassium-promoted MoS₂ is used as a catalyst for mixed alc. synthesis from CO and H₂. This study investigates the room-temperature oxidation of the catalyst and its effect on the surface structure and catalytic activity in alc. synthesis at 573 K and 1.5 MPa. Catalysts were stored in the atmospheric

or

in a vacuum oven for several weeks. The characterization of catalyst was performed using XRD, XPS, FT-IR, and TGA/DTA methods. The XPS data of K₂CO₃/MoS₂ stored in the atmosphere for extended periods indicated the oxidns. of Mo(IV) (as sulfide) to Mo(VI) (as oxide) as well as S²⁻ (as sulfide) to S⁶⁺ (as sulfate) on the MoS₂ surface. The IR results showed that sulfate species first produced by oxidation had Td symmetry, which was further transformed into C_{2v} (bidentate) upon a prolonged storage. The sulfate species formed on the catalyst surface were stable until they were decomposed above 1000 K. The oxidized K₂CO₃/MoS₂ catalyst showed enhanced catalytic activity and high selectivity to C₂+ hydrocarbons, rather than alcs. as did fresh K₂CO₃/MoS₂. These modified catalytic properties were similar to those of fresh K₂SO₄/MoS₂.

CC 22-7 (Physical Organic Chemistry)
Section cross-reference(s): 67

L121 ANSWER 13 OF 15 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2003084721 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12499852
TITLE: Alteration of functional neuroanatomy of simple object
memory in medial temporal lobe epilepsy patients.
AUTHOR: Kang Eunjoo; Nam Hyunwoo; Lee Dong Soo; Lee Sang Kun;
Lee Kyoung-Min; Park Seong-Ho; **Lee Jae Sung**
; **Chung Jun-Key**; Lee Myung Chul
CORPORATE SOURCE: Institute of Radiation Medicine, Seoul National University
Medical Research Center, 28 Yongon-dong, Chongno-gu, Seoul
110-744, Korea.
SOURCE: Neuroreport, (2002 Dec 20) 13 (18) 2475-81.
Journal code: 9100935. ISSN: 0959-4965.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200304
ENTRY DATE: Entered STN: 20030225
Last Updated on STN: 20030406
Entered Medline: 20030404

ABSTRACT:

Using H2 150 PET, we examined the neuroanatomy associated with a simple form of episodic memory in patients with right or left medial temporal lobe epilepsy and normal healthy controls. When line drawings of common objects were memorized and tested after a 30 min delay, no behavioral difference was found between the patient groups and the controls. However, the patients with epilepsy showed greater cortical activations than the control group on the side ipsilateral to the epileptic focus. rCBF in the anterior thalamic region was enhanced in patients relative to the control group. The results showed that long-term dysfunction of the medial temporal lobe might reinforce alternative memory pathways and recruit a distributed cortical network ipsilateral to their epilepsy focus.

CONTROLLED TERM: Check Tags: Male
Adult
Cerebral Cortex: PH, physiology
*Epilepsy, Temporal Lobe: PP, physiopathology
*Epilepsy, Temporal Lobe: RI, radionuclide imaging
Hippocampus: PH, physiology
Humans
Neuronal Plasticity
*Recognition (Psychology): PH, physiology
Research Support, Non-U.S. Gov't
Thalamus: PH, physiology
Tomography, Emission-Computed

L121 ANSWER 14 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2005238769 IN-PROCESS
DOCUMENT NUMBER: PubMed ID: 15875821
TITLE: Toward large-scale integration of carbon nanotubes.
AUTHOR: **Chung Jaehyun**; **Lee Kyong-Hoon**; **Lee Junghoon**; Ruoff Rodney S
SOURCE: Langmuir : ACS journal of surfaces and colloids, (2004 Apr 13) 20 (8) 3011-7.
Journal code: 9882736. ISSN: 0743-7463.
PUB. COUNTRY: United States
DOCUMENT TYPE: Letter
LANGUAGE: English
FILE SEGMENT: NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals

ENTRY DATE: Entered STN: 20050510
Last Updated on STN: 20050510

L121 ANSWER 15 OF 15 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on
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ACCESSION NUMBER: 2001:275696 BIOSIS

DOCUMENT NUMBER: PREV200100275696

TITLE: A prospective correlation of Lauren's histological
classification of stomach cancer with clinicopathological
findings including DNA flow cytometry.

AUTHOR(S): **Lee, Kyoo-Hyung** [Reprint author]; **Lee,**
Je-Hwan; Cho, Jae-Kun; Kim, Tae-Won; Kang, Yoon-Koo;
Lee, Jung-Shin; Kim, Woo-Kun; **Chung,**
Jae-Gul; Lee, In-Chul; Sun, Hee-Sik

CORPORATE SOURCE: Oncology-Hematology, Department of Medicine, Asan Medical
Center, 388-1 Poongnap-dong, Songpa-ku, Seoul, 138-040,
South Korea
khlee2@www.amc.seoul.kr

SOURCE: Pathology Research and Practice, (2001) Vol. 197, No. 4,
pp. 223-229. print.
CODEN: PARPDS. ISSN: 0344-0338.

DOCUMENT TYPE: Article

LANGUAGE: English

ENTRY DATE: Entered STN: 6 Jun 2001

Last Updated on STN: 19 Feb 2002

ABSTRACT: Between November 1990 and December 1992, 217 patients with stomach
cancer were enrolled in a prospective study evaluating the prognostic value of
DNA flow cytometry. Lauren's histological type was evaluated in 216 cases, of
which 102 (47%) were of the diffuse type, 74 (34%) were of the intestinal type,
and 40 (19%) were mixed type tumors. Lauren's histological type showed a
significant correlation with age ($p = 0.028$), sex ($p = 0.004$), tumor size ($p =$
 0.002), T stage ($p = 0.006$), overall TNM stage ($p = 0.008$), histological grade
($p < 0.001$), and tumor ploidy ($p < 0.001$). Intestinal type stomach cancer
showed a significantly higher proportion of aneuploidy (diffuse vs. intestinal
type; 41/102 (40%) vs. 52/74 (70%)). After a median follow-up of 66.1 months
(range, 29.6-78.1), 110 of 216 patients (51%) survived. Patients with
intestinal type stomach cancer had a significantly better survival than did
those with diffuse type stomach cancer (64% vs. 42% of patients surviving, $p =$
 0.020). Our study suggests that there are biological differences between the
two sub-types of Lauren's classification of stomach cancer in addition to the
morphological differences. Lauren's classification should remain valid in
future studies investigating the pathogenetic and clinical aspects of stomach
cancer.

CONCEPT CODE: Digestive system - Physiology and biochemistry 14004
Biochemistry studies - Nucleic acids, purines and
pyrimidines 10062
Digestive system - Pathology 14006
Neoplasms - Pathology, clinical aspects and systemic
effects 24004

INDEX TERMS: Major Concepts
Digestive System (Ingestion and Assimilation); Tumor
Biology

INDEX TERMS: Parts, Structures, & Systems of Organisms
intestine: digestive system

INDEX TERMS: Diseases
stomach cancer: digestive system disease, neoplastic
disease, diffuse type, intestinal type, mixed type
Stomach Neoplasms (MeSH)

INDEX TERMS: Methods & Equipment
DNA flow cytometry: analytical method

INDEX TERMS: Miscellaneous Descriptors
Lauren's histological classification; disease prognosis;
disease survival; gender difference; risk factors; tumor
ploidy; tumor size; tumor stage

ORGANISM: Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
human: female, male, patient
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates,
Vertebrates

=> □

TEXT
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=> file hcaplus

FILE 'HCAPLUS' ENTERED AT 14:43:08 ON 14 OCT 2005

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FILE COVERS 1907 - 14 Oct 2005 VOL 143 ISS 17

FILE LAST UPDATED: 13 Oct 2005 (20051013/ED)

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'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> d que L16

L3	20680	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	NANOTUBES+NT/CT
L4	2884	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	MICROELECTRODES+NT/CT
L8	60	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L3 AND L4
L13	258565	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	GLUCOS?/OBI
L16	4	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L13 AND L8

=> d que L18

L3	20680	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	NANOTUBES+NT/CT
L4	2884	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	MICROELECTRODES+NT/CT
L7	9463	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	GLUCOSE OXIDASE/CT
L8	60	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L3 AND L4
L18	3	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L8 AND L7

=> d que L26

L3	20680	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	NANOTUBES+NT/CT
L5	4758	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	ENZYME ELECTRODES+NT/CT
L6	2046	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	GLUCOSE SENSORS+OLD/CT
L7	9463	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	GLUCOSE OXIDASE/CT
L26	19	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L3 AND L6 AND L5 AND L7

=> d que L27

L3	20680	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	NANOTUBES+NT/CT
L4	2884	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	MICROELECTRODES+NT/CT

```

L5          4758 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ENZYME ELECTRODES+NT/CT
L6          2046 SEA FILE=HCAPLUS ABB=ON  PLU=ON  GLUCOSE SENSORS+OLD/CT
L7          9463 SEA FILE=HCAPLUS ABB=ON  PLU=ON  GLUCOSE OXIDASE/CT
L27         2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L3 AND L6 AND L5 AND L7 AND
          L4

```

=> s (L16 or L18 or L26 or L27) not L107

L122 19 (L16 OR L18 OR L26 OR L27) NOT L107

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with
author
search*

=> file medline

FILE 'MEDLINE' ENTERED AT 14:43:15 ON 14 OCT 2005

FILE LAST UPDATED: 13 OCT 2005 (20051013/UP). FILE COVERS 1950 TO DATE.

On December 19, 2004, the 2005 MeSH terms were loaded.

The MEDLINE reload for 2005 is now available. For details enter HELP
RLOAD at an arrow prompt (=>). See also:

<http://www.nlm.nih.gov/mesh/>
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

OLDMEDLINE now back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
MeSH 2005 vocabulary.

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substance identification.

=> d que L39

```

L29          391 SEA FILE=MEDLINE ABB=ON  PLU=ON  NANOTUBES, CARBON/CT
L30          9350 SEA FILE=MEDLINE ABB=ON  PLU=ON  MICROELECTRODES/CT
L31          507 SEA FILE=MEDLINE ABB=ON  PLU=ON  ION-SELECTIVE ELECTRODES/CT
L35         317012 SEA FILE=MEDLINE ABB=ON  PLU=ON  GLUCOS?
L36          10 SEA FILE=MEDLINE ABB=ON  PLU=ON  L29 AND L30
L37           1 SEA FILE=MEDLINE ABB=ON  PLU=ON  L29 AND L31
L38          11 SEA FILE=MEDLINE ABB=ON  PLU=ON  L36 OR L37
L39           1 SEA FILE=MEDLINE ABB=ON  PLU=ON  L38 AND L35

```

=> d que L43

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L29          391 SEA FILE=MEDLINE ABB=ON  PLU=ON  NANOTUBES, CARBON/CT
L32          6401 SEA FILE=MEDLINE ABB=ON  PLU=ON  BIOSENSING TECHNIQUES/CT
L35         317012 SEA FILE=MEDLINE ABB=ON  PLU=ON  GLUCOS?
L40          40 SEA FILE=MEDLINE ABB=ON  PLU=ON  L29 AND L32
L41           9 SEA FILE=MEDLINE ABB=ON  PLU=ON  L40 AND L35
L42         17523 SEA FILE=MEDLINE ABB=ON  PLU=ON  ELECTROCHEMISTRY/CT
L43           6 SEA FILE=MEDLINE ABB=ON  PLU=ON  L41 AND L42

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=> d que L44

```

L29          391 SEA FILE=MEDLINE ABB=ON  PLU=ON  NANOTUBES, CARBON/CT
L33         2418 SEA FILE=MEDLINE ABB=ON  PLU=ON  GLUCOSE OXIDASE/CT

```

L42 17523 SEA FILE=MEDLINE ABB=ON PLU=ON ELECTROCHEMISTRY/CT
L44 6 SEA FILE=MEDLINE ABB=ON PLU=ON L29 AND L42 AND L33

=> s (L39 or L43 or L44) not L111

L123 8 (L39 OR L43 OR L44) NOT L111

=> file embase

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=> d que L66

L52 319 SEA FILE=EMBASE ABB=ON PLU=ON NANOTUBE/CT
L56 324 SEA FILE=EMBASE ABB=ON PLU=ON AMPEROMETRIC BIOSENSOR/CT
L60 259838 SEA FILE=EMBASE ABB=ON PLU=ON GLUCOS?
L65 2 SEA FILE=EMBASE ABB=ON PLU=ON L52 AND L56 AND L60
L66 1 SEA FILE=EMBASE ABB=ON PLU=ON L65 AND SCANNING

=> s L66 not L116

L124 1 L66 NOT L116

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=> file pascal inspec biosis biotechds wpindex anabstr scisearch

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Desk by telephone or via SEND in the STNMAIL file.

=> d que L94

L74 43086 SEA NANOTUB?
L75 731415 SEA GLUCOS?
L91 8929 SEA HYDROGEN GAS
L92 197 SEA L74 AND L91
L94 1 SEA L92 AND L75

=> d que L98

L74 43086 SEA NANOTUB?
L76 17712 SEA GLUCOSE OXIDASE
L77 656483 SEA MICROELECTROD? OR ELECTROD?
L79 165 SEA L74 AND L76
L80 132 SEA L79 AND L77
L83 1503024 SEA GAS
L98 2 SEA L80 AND L83

=> d que L100

L74 43086 SEA NANOTUB?
L76 17712 SEA GLUCOSE OXIDASE
L77 656483 SEA MICROELECTROD? OR ELECTROD?
L79 165 SEA L74 AND L76
L80 132 SEA L79 AND L77
L82 809921 SEA HYDROGEN
L86 12390 SEA SENS? (2A) GLUCOS?
L99 43 SEA L80 AND L82
L100 25 SEA L99 AND L86

~~=> s (L94 or L98 or L100) not L120~~

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L125 26 (L94 OR L98 OR L100)

=> => dup rem L122 L123 L124 L125

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PROCESSING COMPLETED FOR L122
PROCESSING COMPLETED FOR L123
PROCESSING COMPLETED FOR L124
PROCESSING COMPLETED FOR L125
L126 31 DUP REM L122 L123 L124 L125 (23 DUPLICATES REMOVED)
 ANSWERS '1-19' FROM FILE HCAPLUS
 ANSWERS '20-26' FROM FILE MEDLINE
 ANSWER '27' FROM FILE EMBASE
 ANSWER '28' FROM FILE PASCAL
 ANSWER '29' FROM FILE BIOTECHDS
 ANSWERS '30-31' FROM FILE SCISEARCH

=> d ibib abs hitind L126 1-19; d iall L126 20-31

L126 ANSWER 1 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2005:561923 HCAPLUS
DOCUMENT NUMBER: 143:189283
TITLE: Peptide Nanotube-Modified Electrodes for
 Enzyme-Biosensor Applications
AUTHOR(S): Yemini, Miri; Reches, Meital; Gazit, Ehud; Rishpon,
 Judith
CORPORATE SOURCE: Department of Molecular Microbiology and
 Biotechnology, George S. Wise Faculty of Life
 Sciences, Tel Aviv University, Tel Aviv-Jaffa, 69978,
 Israel
SOURCE: Analytical Chemistry (2005), 77(16), 5155-5159
 CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The fabrication and notably improved performance of composite electrodes
 based on modified self-assembled diphenylalanine peptide nanotubes is
 described. Peptide nanotubes were attached to gold electrodes, and the
 authors studied the resulting electrochem. behavior using cyclic
 voltammetry and chronoamperometry. The peptide nanotube-based electrodes
 demonstrated a direct and unmediated response to hydrogen peroxide and
 NADH at a potential of +0.4 V (vs. SCE). This biosensor enables a

sensitive determination of glucose by monitoring the hydrogen peroxide produced by an enzymic reaction between the glucose oxidase attached to the peptide nanotubes and glucose. In addition, the marked electrocatalytic activity toward NADH enabled a sensitive detection of ethanol using ethanol dehydrogenase and NAD+. The peptide nanotube-based amperometric biosensor provides a potential new tool for sensitive biosensors and biomol. diagnostics.

CC 9-1 (Biochemical Methods)

IT Biosensors

Enzyme electrodes

(amperometric; self-assembled peptide nanotube-modified electrodes for enzyme-biosensor applications)

IT **Nanotubes**

(diphenylalanine; self-assembled peptide nanotube-modified electrodes for enzyme-biosensor applications)

IT **Glucose sensors**

(self-assembled peptide nanotube-modified electrodes for immobilized glucose oxidase-glucose biosensor applications)

IT **9001-37-0D**, Glucose oxidase, conjugates with thiolated diphenylalanine nanotubes-gold electrodes

RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); CAT (Catalyst use); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(self-assembled peptide nanotube-modified electrodes for immobilized glucose oxidase-glucose biosensor applications)

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 2 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 3

ACCESSION NUMBER: 2005:124128 HCAPLUS

DOCUMENT NUMBER: 143:129143

TITLE: Electrochemical biosensing platforms using phthalocyanine-functionalized carbon nanotube electrode

AUTHOR(S): Ye, Jian-Shan; Wen, Ying; Zhang, Wei De; Cui, Hui Fang; Xu, Guo Qin; Sheu, Fwu-Shan

CORPORATE SOURCE: Department of Biological Sciences, National University of Singapore, Singapore, 117543, Singapore

SOURCE: Electroanalysis (2005), 17(1), 89-96

CODEN: ELANEU; ISSN: 1040-0397

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Iron-phthalocyanines (FePc) are functionalized at multi-walled carbon nanotubes (MWNTs) to remarkably improve the sensitivity toward hydrogen peroxide. We constructed a highly sensitive and selective glucose sensor on FePc-MWNTs electrode based on the immobilization of glucose oxidase (GOD) on poly-o-aminophenol (POAP)-electropolymd. electrode surface. SEM images indicate that GOD enzymes trapped in POAP film tend to deposit primarily on the curved tips and evenly disperse along the sidewalls. The resulting GOD POAP/FePc-MWNTs biosensor exhibits excellent performance for glucose with a rapid response (less than 8 s), a wide linear range (up to 4.0×10^{-3} M), low detection limits (2.0×10^{-7} M with a signal-to-noise of 3), a highly reproducible response (RSD of 2.6%), and long-term stability (120 days). Such characteristics may be attributed to the catalytic activity of FePc and carbon nanotube, permselectivity of POAP film, as well as the large surface area of carbon nanotube materials.

CC 9-1 (Biochemical Methods)

IT **Nanotubes**

(carbon; electrochem. biosensing platforms using phthalocyanine-functionalized multi-walled carbon nanotube electrode with immobilized enzyme)

IT **Glucose sensors**

(electrochem. biosensing platforms using phthalocyanine-functionalized multi-walled carbon nanotube electrode with immobilized enzyme)

IT **9001-37-0, Glucose oxidase**

RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)

(immobilized; electrochem. biosensing platforms using phthalocyanine-functionalized multi-walled carbon nanotube electrode with immobilized enzyme)

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 3 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 4

ACCESSION NUMBER: 2003:984211 HCAPLUS

DOCUMENT NUMBER: 140:142015

TITLE: Electrochemical biosensing platforms using platinum nanoparticles and carbon nanotubes

AUTHOR(S): Hrapovic, Sabahudin; Liu, Yali; Male, Keith B.; Luong, John H. T.

CORPORATE SOURCE: Biotechnology Research Institute, National Research Council Canada, Montreal, QC, H4P 2R2, Can.

SOURCE: Analytical Chemistry (2004), 76(4), 1083-1088
CODEN: ANCHAM; ISSN: 0003-2700

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Platinum nanoparticles with a diameter of 2-3 nm were prepared and used in combination with single-wall carbon nanotubes (SWCNTs) for fabricating electrochem. sensors with remarkably improved sensitivity toward hydrogen peroxide. Nafion, a perfluorosulfonated polymer, was used to solubilize SWCNTs and also displayed strong interactions with Pt nanoparticles to form a network that connected Pt nanoparticles to the electrode surface. TEM and AFM micrographs illustrated the deposition of Pt nanoparticles on carbon nanotubes whereas cyclic voltammetry confirmed an elec. contact through SWCNTs between Pt nanoparticles and the glassy carbon (GC) or carbon fiber backing. With glucose oxidase (GOx) as an enzyme model, we constructed a GC or carbon fiber microelectrode-based biosensor that responds even more sensitively to glucose than the GC/GOx electrode modified by Pt nanoparticles or CNTs alone. The response time and detection limit ($S/N = 3$) of this biosensor was determined to be 3 s and 0.5 μM , resp.

CC 9-7 (Biochemical Methods)

IT **Nanotubes**

(carbon; electrochem. biosensing platforms using platinum nanoparticles and carbon nanotubes)

IT **Cyclic voltammetry**

Enzyme electrodes

Microelectrodes

Nanoparticles

Transmission electron microscopy

(electrochem. biosensing platforms using platinum nanoparticles and carbon nanotubes)

IT **50-99-7, D-Glucose, analysis**

RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)

(electrochem. biosensing platforms using platinum nanoparticles and carbon nanotubes)

IT 9001-37-0, Glucose oxidase
RL: ARG (Analytical reagent use); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); PROC (Process); USES (Uses)
(electrochem. biosensing platforms using platinum nanoparticles and carbon nanotubes)

REFERENCE COUNT: 64 THERE ARE 64 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 4 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 7

ACCESSION NUMBER: 2003:638613 HCAPLUS

DOCUMENT NUMBER: 140:266944

TITLE: Biosensors based on aligned carbon nanotubes coated with inherently conducting polymers

AUTHOR(S): Gao, Mei; Dai, Liming; Wallace, Gordon G.

CORPORATE SOURCE: Division of Molecular Science, CSIRO, VIC 3169, Australia

SOURCE: Electroanalysis (2003), 15(13), 1089-1094

CODEN: ELANEU; ISSN: 1040-0397

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The use of multiwalled aligned carbon nanotubes provides a novel electrode platform for inherently conducting polymer based biosensors. The example used here to highlight the usefulness of such a platform is the polypyrrole based glucose oxidase system for detection of glucose. The use of these three dimensional electrodes offers advantages in that large accessible enzyme loadings can be obtained within an ultrathin layer. It has also been found that the detection of H2O2 at these new electrode structures containing iron loaded nanotube tips can be achieved at low anodic potentials. The result is a sensitive and selective glucose sensor.

CC 9-1 (Biochemical Methods)

IT Electrodes

Glucose sensors

Microarray technology

(biosensors based on aligned carbon nanotubes coated with inherently conducting polymers)

IT **Nanotubes**

(carbon; biosensors based on aligned carbon nanotubes coated with inherently conducting polymers)

IT 9001-37-0, Glucose oxidase

RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)

(biosensors based on aligned carbon nanotubes coated with inherently conducting polymers)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 5 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:1021816 HCAPLUS

DOCUMENT NUMBER: 143:301972

TITLE: Carbon nanotube containing ink based electrode biosensor

INVENTOR(S): Gotoh, Masao; Koide, Satoshi; Kurusu, Fumiyo; Nakamura, Hideaki; Karube, Isao

PATENT ASSIGNEE(S): National Institute of Advanced Industrial Science and Technology, Japan

SOURCE: PCT Int. Appl., 30 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005088288	A1	20050922	WO 2005-JP2699	20050221
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: JP 2004-66984 A 20040310

AB Disclosed is a sensor using a material with high catalyst activity such as carbon nanotube which can be used as a biosensor that is excellent in selectivity of interfering substances as well as in productivity, economical efficiency and convenience. Specifically disclosed is a carbon nanotube biosensor having electrodes obtained by printing ink on a substrate, where at least one of carbon nanotube, carbon nanohorn, cocoon, carbon nanocoil, fullerene and derivs. of those; carbon black or graphite; a binder resin; organic solvent; and preferably addnl. a metal powder are added to the ink.

IC ICM G01N027-30

ICS C09D011-00; C12M001-00; C12N015-09; G01N027-327; G01N037-00

CC 9-1 (Biochemical Methods)

IT Biosensors

Cocoon

Electrodes

Glass substrates

Glucose sensors

Printing (impact)

Screen printing

(carbon nanotube containing ink based electrode biosensor)

IT Nanotubes

(carbon; carbon nanotube containing ink based electrode biosensor)

IT 9001-37-0D, Glucose oxidase, potassium ferricyanide mixture
 9001-55-2D, Hydroxybutyrate dehydrogenase, potassium ferricyanide mixture
 9001-96-1D, Pyruvate oxidase, potassium ferricyanide mixture 9025-13-2D,
 Creatininase, potassium ferricyanide mixture 9026-00-0, Cholesterol
 esterase 9028-53-9D, Glucose dehydrogenase, potassium ferricyanide mixture
 9029-22-5D, Sarcosine oxidase, potassium ferricyanide mixture 9031-72-5D,
 Alcohol dehydrogenase, potassium ferricyanide mixture 37340-58-2D,
 Creatinase, potassium ferricyanide mixture 81669-60-5D, Glucose
 dehydrogenase, potassium ferricyanide mixture 134093-03-1D; Fructosylamine
 oxidase, potassium ferricyanide mixture

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(added to ink; carbon nanotube containing ink based electrode biosensor)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 6 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:348024 HCAPLUS

TITLE: An amperometric glucose biosensor based on glucose
 oxidase immobilized in electropolymerized

poly(o-aminophenol) and carbon nanotubes composite film on a gold electrode

AUTHOR(S): Pan, Dawei; Chen, Jinhua; Yao, Shouzhao; Tao, Wenyan; Nie, Lihua

CORPORATE SOURCE: State Key Laboratory of Chemo/Biosensing and Chemometrics, College of Chemistry and Chemical Engineering, Hunan University, Changsha, 410082, Peop. Rep. China

SOURCE: Analytical Sciences (2005), 21(4), 367-371
CODEN: ANSCEN; ISSN: 0910-6340

PUBLISHER: Japan Society for Analytical Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB An amperometric glucose biosensor is developed that is based on immobilization of glucose oxidase (GOD) in a composite film of poly(o-aminophenol) (POAP) and carbon nanotubes (CNT), which are electrochem. co-polymerized at a gold (Au) electrode. Because of the high surface/volume ratio and excellent elec. conductivity of CNT, the biosensor based

on an Au/POAP/CNT/GOD electrode has lower detection limit (0.01 mM), larger maximum response current (0.24 mA cm⁻²) and higher sensitivity (11.4 mA M⁻¹ cm⁻²) than the values of the biosensor based on an Au/POAP/GOD electrode. Addnl., the biosensor shows fast response time, large response current, and good anti-interferent ability for ascorbic acid, uric acid and acetaminophen. Good reproducibility and stability of the biosensor are also observed

CC 9-1 (Biochemical Methods)

IT Biosensors

Electric conductivity

Glucose sensors

Immobilization, molecular or cellular

Surface area

(amperometric glucose biosensor based on glucose oxidase immobilized in electropolymd. poly(o-aminophenol) and carbon nanotubes composite film on a gold electrode)

IT **Nanotubes**

(carbon; amperometric glucose biosensor based on glucose oxidase immobilized in electropolymd. poly(o-aminophenol) and carbon nanotubes composite film on a gold electrode)

IT **9001-37-0, Glucose oxidase**

RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)

(amperometric glucose biosensor based on glucose oxidase immobilized in electropolymd. poly(o-aminophenol) and carbon nanotubes composite film on a gold electrode)

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 7 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:433101 HCAPLUS

DOCUMENT NUMBER: 143:139348

TITLE: Noninvasive and continuous recordings of auxin fluxes in intact root apex with a carbon nanotube-modified and self-referencing microelectrode

AUTHOR(S): Mancuso, Stefano; Marras, Anna Maria; Magnus, Volker; Baluska, Frantisek

CORPORATE SOURCE: Dipartimento di Ortoflorofrutticoltura, Polo Scientifico, Universita di Firenze, Sesto Fiorentino (FI), 50019, Italy

SOURCE: Analytical Biochemistry (2005), 341(2), 344-351

CODEN: ANBCA2; ISSN: 0003-2697
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Auxin (also known as indole-3-acetic acid, IAA) represents an ancient signaling mol. of plants that also exerts bioactive actions on yeast and animal cells. Importantly, IAA emerges as a new anticancer agent due to the ability of oxidatively activated IAA to selectively kill tumor cells. IAA acts as a pheromone-like mol. in brown algae, whereas the hormone concept of IAA dominates current plant biol. However, recent advances also favor the morphogen- and transmitter-like nature of IAA in plants, making this small mol. one of the most unique mols. in the eukaryotic superkingdom. Here, we introduced new technol. for the continuous measuring of IAA fluxes in living cells, tissues, and whole organs that is based on a carbon nanotube-modified and self-referencing microelectrode specific for IAA. This technique not only will advance our knowledge of how IAA regulates plant development but will also be applicable in medicine for its potential use in cancer therapy.

CC 64-2 (Pharmaceutical Analysis)
Section cross-reference(s): 9, 11, 72

IT **Nanotubes**
(carbon; noninvasive and continuous recordings of auxin fluxes in intact root apex with a carbon nanotube-modified platinum microelectrode)

IT Antitumor agents
Fluxes
Immobilization, molecular or cellular
Microelectrodes

(noninvasive and continuous recordings of auxin fluxes in intact root apex with a carbon nanotube-modified platinum microelectrode)
IT 50-99-7, **Glucose**, analysis 57-50-1, Sucrose, analysis
86-87-3, NAA 88-82-4, 2,3,5-Triiodobenzoic acid 94-75-7, 2,4-D, analysis 132-66-1, N-1-Naphthylphthalamic acid 7447-40-7, Potassium chloride, analysis 7487-88-9, Magnesium sulfate, analysis 7558-80-7, Sodium dihydrogen phosphate 7757-79-1, Potassium nitrate, analysis 7758-98-7, Copper sulfate, analysis 7773-01-5, Manganese chloride 7778-77-0, Potassium dihydrogen phosphate 10124-37-5, Calcium nitrate 20350-15-6, Brefeldin A 26628-22-8, Sodium azide
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(interferent species; noninvasive and continuous recordings of auxin fluxes in intact root apex with a carbon nanotube-modified platinum microelectrode)

REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 8 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:200957 HCAPLUS

DOCUMENT NUMBER: 143:244372

TITLE: Solution phase, near infrared optical sensors based on single walled carbon nanotubes

AUTHOR(S): Barone, Paul W.; Baik, Seunghyun; Strano, Michael S.

CORPORATE SOURCE: Department of Chemical and Biomolecular Engineering, University of Illinois - Urbana/Champaign, Urbana, IL, 61801, USA

SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2005), 46(1), 227-228
CODEN: ACPPAY; ISSN: 0032-3934

PUBLISHER: American Chemical Society, Division of Polymer Chemistry

DOCUMENT TYPE: Journal; (computer optical disk)

LANGUAGE: English

AB The mechanisms of signal transduction for solution phase, near-IR sensors using single walled carbon nanotubes that modulate their emission in response to the adsorption of specific biomols. were elucidated. New routes to engineer selective coatings onto the nanotube surface were examined, and the mechanisms of optical modulation for sensor applications were also elucidated. As an application, β -D-glucose sensing was investigated as a model system. It was shown that a target analyte can interact with these functional groups to quant. modulate fluorescent emission.

CC 9-5 (Biochemical Methods)

Section cross-reference(s): 3, 7

IT **Nanotubes**

(carbon; solution phase near IR optical sensors based on single walled carbon nanotubes and glucose determination)

IT Fluorescence

Fluorometry

Glucose sensors

(solution phase near IR optical sensors based on single walled carbon nanotubes and glucose determination)

IT 9001-37-0, Glucose oxidase

RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(solution phase near IR optical sensors based on single walled carbon nanotubes and glucose determination)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 9 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:632866 HCAPLUS

DOCUMENT NUMBER: 141:136632

TITLE: Method for manufacturing electrochemical sensor, and structure thereof

INVENTOR(S): Huang, Chun-Mu

PATENT ASSIGNEE(S): Taiwan

SOURCE: U.S. Pat. Appl. Publ., 46 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004149578	A1	20040805	US 2003-354684	20030130
WO 2004070373	A1	20040819	WO 2003-US3084	20030131
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: US 2003-354684 A 20030130

AB A method for manufacturing an electrochem. sensor and a structure thereof are provided. The method includes steps of (a) providing an injection-molding

device, (b) providing an isolating substrate having a 1st recess and a 1st through hole, (c) positing the isolating substrate in the injection-molding device, (d) injecting a conductive plastic material into the injection-molding device for forming a conductive strip disposed in the 1st recess and including an output terminal and a testing electrode disposed in the 1st through hole, (e) providing a chemical reagent, and (f) positing the chemical reagent on the testing electrode for testing a sample solution

IC ICM G01N027-26

INCL 204403010; 204416000; 029592100

CC 9-1 (Biochemical Methods)

IT **Nanotubes**

(carbon; design and fabrication of disposable electrochem. sensor for analyte determination in fluid sample)

IT Blood analysis

Conducting polymers

Electronic device fabrication

Enzyme electrodes

Glucose sensors

Powders

(design and fabrication of disposable electrochem. sensor for analyte determination in fluid sample)

IT 9001-37-0, Glucose oxidase 9002-12-4, Uricase 9026-00-0,

Cholesterol esterase 9028-76-6, Cholesterol oxidase

RL: ARG (Analytical reagent use); DEV (Device component use); ANST

(Analytical study); USES (Uses)

(design and fabrication of disposable electrochem. sensor for analyte determination in fluid sample)

L126 ANSWER 10 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:988558 HCAPLUS

DOCUMENT NUMBER: 142:332055

TITLE: Glucose biosensor based on multi-walled carbon nanotube modified glassy carbon electrode

AUTHOR(S): Dai, Yi-Qing; Shiu, Kwok-Keung

CORPORATE SOURCE: Department of Chemistry, Hong Kong Baptist University, Kwoloon Tong, Hong Kong

SOURCE: Electroanalysis (2004), 16(20), 1697-1703

CODEN: ELANEU; ISSN: 1040-0397

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

AB An amperometric glucose biosensor based on multi-walled carbon nanotube (MWCNT) modified glassy carbon electrode has been developed.

MWCNT-modified glassy carbon electrode was obtained by casting the electrode surface with multi-walled carbon nanotube materials. Glucose oxidase was co-immobilized on the MWCNT-modified glassy carbon surface by electrochem. deposition of poly(o-phenylenediamine) film. Enhanced catalytic electro-reduction behavior of oxygen at MWCNT-modified electrode surface was observed at a potential of - 0.40 V (vs. Ag|AgCl) in neutral medium. The steady-state amperometric response to glucose was determined at a selected potential of -0.30 V by means of the reduction of dissolved oxygen consumed by the enzymic reaction. Common interferents such as ascorbic acid, 4-acetamidophenol, and uric acid did not interfere in the glucose determination. The linear range for glucose determination extended to 2.0 mM

and the

detection limit was estimated to be about 0.03 mM.

CC 9-1 (Biochemical Methods)

IT **Glucose sensors**

(Amperometric; glucose biosensor based on multi-walled carbon nanotube

modified glassy carbon electrode)

IT **Nanotubes**
(carbon, multi-walled; glucose biosensor based on multi-walled carbon nanotube modified glassy carbon electrode)

IT **9001-37-0, Glucose oxidase**
RL: ARG (Analytical reagent use); DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); PROC (Process); USES (Uses)
(glucose biosensor based on multi-walled carbon nanotube modified glassy carbon electrode)

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 11 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:1030422 HCAPLUS

DOCUMENT NUMBER: 142:351419

TITLE: Glucose biosensor based on the enzyme electrode with

carbon nanotube/platinum nanoparticle

AUTHOR(S): Zhu, Yu'nu; Peng, Tuzhi; Li, Jianping

CORPORATE SOURCE: Department of Chemistry, Zhejiang University,

Hangzhou, 310028, Peop. Rep. China

SOURCE: Fenxi Huaxue (2004), 32(10), 1299-1303

CODEN: FHHHDT; ISSN: 0253-3820

PUBLISHER: Kexue Chubanshe

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB An amperometric glucose biosensor based on the enzyme electrode with carbon nanotube/platinum nanoparticle modified on glassy carbon electrode surface (CNT-Pt/GCE) has been fabricated. The glucose oxidase (GOD) in gelatin is cross-linked by the use of glutaraldehyde. Comparing with normal GOD/Pt electrode, the anal. property of GOD/CNT-Pt/GCE electrode is improved. The detection limit of glucose decreases from 6.7×10^{-3} mol/L to 8.3×10^{-4} mol/L; the working potential lowers from 0.65V to 0.45V; the response time shortens from 30s to 5s. It is demonstrated that the CNT-Pt/GCE with high electro-catalytic activity is a suitable basic electrode for preparing enzyme electrodes.

CC 9-1 (Biochemical Methods)

IT **Glucose sensors**
(Amperometric; glucose biosensor based on enzyme electrode with carbon nanotube/platinum nanoparticle)

IT **Nanotubes**
(carbon; glucose biosensor based on enzyme electrode with carbon nanotube/platinum nanoparticle)

IT Crosslinking
Electronic device fabrication

Enzyme electrodes

Nanoparticles

(glucose biosensor based on enzyme electrode with carbon nanotube/platinum nanoparticle)

IT **9001-37-0, Glucose oxidase**
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(glucose biosensor based on enzyme electrode with carbon nanotube/platinum nanoparticle)

L126 ANSWER 12 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:382170 HCAPLUS

DOCUMENT NUMBER: 141:391204

TITLE: Diamond and carbon nanotube glucose sensors based on electropolymerization

AUTHOR(S): Loh, Kian Ping; Zhao, Sheng Liang; Zhang, Wei De
CORPORATE SOURCE: Department of Chemistry, National University of
Singapore, Singapore, 117543, Singapore
SOURCE: Diamond and Related Materials (2004), 13(4-8),
1075-1079
CODEN: DRMTE3; ISSN: 0925-9635
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The glucose sensing properties of diamond and carbon nanotube (CNT)
electrodes were evaluated comparatively. Amperometric glucose sensors had
been constructed on boron-doped diamond (BDD) and CNT electrodes based on
the immobilization of glucose oxidase (GOD) on 3,3'-diaminobenzidine
(DAB)-electropolymerized electrode surface. DAB forms a self-limiting layer
with NH₂ functional groups for tethering to GOD mol. The cyclic
voltammograms of DAB on BDD and CNT revealed important structural
differences between the two electrode surfaces. Modification with DAB
allowed the CNT to show selective response to glucose at a lower electrode
voltage of 0.3 V, and with suppressed interference signals from ascorbic
acid (LAA) and uric acid (UA). No selective response to glucose was
obtained from DAB-modified BDD electrode.
CC 9-1 (Biochemical Methods)
IT **Glucose sensors**
(amperometric; diamond and carbon nanotube glucose sensors based on
electropolymerization of diaminobenzidine for glucose oxidase immobilization)
IT **Nanotubes**
(carbon; diamond and carbon nanotube glucose sensors based on
electropolymerization of diaminobenzidine for glucose oxidase immobilization)
IT **9001-37-0, Glucose oxidase**
RL: ARG (Analytical reagent use); DEV (Device component use); ANST
(Analytical study); USES (Uses)
(diamond and carbon nanotube glucose sensors based on electropolymerization of
diaminobenzidine for glucose oxidase immobilization)
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 13 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:776815 HCAPLUS
DOCUMENT NUMBER: 142:256909
TITLE: A polypyrrole-carbon-nanotube (PPY-MWNT) nanocomposite
glucose sensor
AUTHOR(S): Teh, Kwok-Siong; Lin, Liwei
CORPORATE SOURCE: Berkeley Sensors and Actuators Center, Department of
Mechanical Engineering, University of California,
Berkeley, CA, USA
SOURCE: IEEE International Conference on Micro Electro
Mechanical Systems, Technical Digest, 17th,
Maastricht, Netherlands, Jan. 25-29, 2004 (2004),
395-398. Institute of Electrical and Electronics
Engineers: New York, N. Y.
CODEN: 69FVFS; ISBN: 0-7803-8265-X
DOCUMENT TYPE: Conference
LANGUAGE: English
AB We present a novel, two-terminal enzymic mol. device sensitive to glucose
concentration based on doped polypyrrole/multi-walled-carbon-nanotube
(PPy-MWNT)
nanocomposite that obviates the need for reference electrode and electron
mediators. This is realized via reversible, oxidation-reduction induced
conductivity
change of a dodecylbenzenesulfonate (DBS)-doped PPy-MWNT membrane spanning

across a microgap adjoining two electrodes. In this work, we discovered that although glucose oxidase (GOx)-laden, DBS-doped PPy membrane is sensitive to glucose between 0-10mM, the incorporation of MWNT into similar membrane extends its detection ceiling to 20mM, which covers the physiol. important range for diabetics.

CC 9-1 (Biochemical Methods)

IT **Nanotubes**

(carbon, multi-walled; polypyrrole-carbon-nanotube (PPY-MWNT) nanocomposite glucose sensor)

IT **Glucose sensors**

Membranes, nonbiological

Nanocomposites

Polymerization

Redox reaction

Reference electrodes

(polypyrrole-carbon-nanotube (PPY-MWNT) nanocomposite glucose sensor)

IT **9001-37-0**, Glucose oxidase

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(polypyrrole-carbon-nanotube (PPY-MWNT) nanocomposite glucose sensor)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 14 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:996277 HCAPLUS

DOCUMENT NUMBER: 140:142016

TITLE: Glucose biosensors based on carbon nanotube nanoelectrode ensembles

AUTHOR(S): Lin, Yuehe; Lu, Fang; Tu, Yi; Ren, Zhifeng

CORPORATE SOURCE: Pacific Northwest National Laboratory, Richland, WA, 99352, USA

SOURCE: Nano Letters (2004), 4(2), 191-195

CODEN: NALEFD; ISSN: 1530-6984

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB This paper describes the development of glucose biosensors based on carbon nanotube (CNT) nanoelectrode ensembles (NEEs) for the selective detection of glucose. Glucose oxidase was covalently immobilized on CNT NEEs via carbodiimide chemical by forming amide linkages between their amine residues and carboxylic acid groups on the CNT tips. The catalytic reduction of hydrogen peroxide liberated from the enzymic reaction of glucose oxidase upon the glucose and oxygen on CNT NEEs leads to the selective detection of glucose. The biosensor effectively performs a selective electrochem. anal. of glucose in the presence of common interferents (e.g., acetaminophen, uric and ascorbic acids), avoiding the generation of an overlapping signal from such interferers. Such an operation eliminates the need for permselective membrane barriers or artificial electron mediators, thus greatly simplifying the sensor design and fabrication.

CC 9-7 (Biochemical Methods)

IT **Nanotubes**

(carbon; glucose biosensors based on carbon nanotube nanoelectrode ensembles)

IT Cyclic voltammetry

Enzyme electrodes

Glucose sensors

(glucose biosensors based on carbon nanotube nanoelectrode ensembles)

IT **9001-37-0**, Glucose oxidase

RL: ARG (Analytical reagent use); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); PROC (Process); USES (Uses)

(glucose biosensors based on carbon nanotube nanoelectrode ensembles)

REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 15 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:417196 HCAPLUS

DOCUMENT NUMBER: 139:161694

TITLE: Glucose sensors based on glucose-oxidase-containing
polypyrrole/aligned carbon nanotube coaxial nanowire
electrodes

AUTHOR(S): Gao, M.; Dai, L.; Wallace, G. G.

CORPORATE SOURCE: CSIRO Molecular Science, VIC 3169, Australia

SOURCE: Synthetic Metals (2003), 137(1-3), 1393-1394

CODEN: SYMEDZ; ISSN: 0379-6779

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Coaxial nanowires consisting of a concentric layer of polypyrrole
uniformly coated onto individual aligned nanotubes have provided a novel
template for making glucose sensors with a large amount of enzyme
electrochem. entrapped into the ultra thin polypyrrole (PPy) film. The
aligned structure of carbon nanotubes plays an important role for glucose
determination at lower anodic potential with a high sensitivity and
selectivity.

In addition, the use of aligned, highly accessible three-dimensional carbon
nanotube arrays for oxidizing biomols. is also presented in this paper.

CC 9-7 (Biochemical Methods)

IT **Nanotubes**

(carbon; glucose sensors based on glucose-oxidase-containing
polypyrrole/aligned carbon nanotube coaxial nanowire electrodes)

IT Cyclic voltammetry

Enzyme electrodes

Glucose sensors

Immobilization, molecular or cellular

Nanowires

Ultrathin films

(glucose sensors based on glucose-oxidase-containing polypyrrole/aligned
carbon nanotube coaxial nanowire electrodes)

IT **9001-37-0, Glucose oxidase**

RL: ARG (Analytical reagent use); PEP (Physical, engineering or chemical
process); PYP (Physical process); ANST (Analytical study); PROC (Process);
USES (Uses)

(glucose sensors based on glucose-oxidase-containing polypyrrole/aligned
carbon nanotube coaxial nanowire electrodes)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 16 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:545538 HCAPLUS

DOCUMENT NUMBER: 139:300794

TITLE: Surface modification of aligned carbon nanotube arrays
for electrochemical sensing applications

AUTHOR(S): Soundarrajan, Prabhu; Patil, Ajeeta; Dai, Liming

CORPORATE SOURCE: College of Polymer Science and Polymer Engineering,
Department of Polymer Engineering, The University of
Akron, Akron, OH, 44304-2909, USA

SOURCE: Journal of Vacuum Science & Technology, A: Vacuum,
Surfaces, and Films (2003), 21(4), 1198-1201

CODEN: JVTAD6; ISSN: 0734-2101

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal
LANGUAGE: English

AB The excellent optoelectronic, mech., and thermal properties of carbon nanotubes have made them very attractive for a wide range of potential applications. However, many applications require the growth of aligned carbon nanotubes with surface modification. The authors have developed a simple pyrolytic method for large-scale production of aligned carbon nanotube arrays perpendicular to the substrate. These aligned carbon nanotube arrays can be transferred onto various substrates of particular interest (e.g., polymer films for organic optoelectronic devices) in either a patterned or non-patterned fashion. The well-aligned structure further allows one to prepare aligned coaxial nanowires by electrochem. depositing a concentric layer of an appropriate conducting polymer onto the individual aligned carbon nanotubes. This approach is particularly attractive, as it allows surface characteristics of the aligned carbon nanotubes to be tuned to meet specific requirements for particular applications while their alignment structure can be largely retained. These aligned carbon nanotubes with tunable surface characteristics are of great significance to various practical applications. The authors demonstrate the use of the conducting-polymer-coated aligned carbon nanotubes for electrochem. sensing applications.

CC 79-2 (Inorganic Analytical Chemistry)
Section cross-reference(s): 9, 38

IT **Enzyme electrodes**
(amperometric; glucose determination by enzyme electrode with immobilized glucose oxidase on polyaniline-coated aligned carbon nanotube modified electrode)

IT **Nanotubes**
(carbon; electrochem. surface modification of aligned carbon nanotube arrays for use as electrochem. sensors)

IT **Glucose sensors**
(glucose determination by enzyme electrode with immobilized glucose oxidase on polyaniline-coated aligned carbon nanotube modified electrode)

IT **9001-37-0, Glucose oxidase** 25233-30-1, Polyaniline
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(glucose determination by enzyme electrode with immobilized glucose oxidase on polyaniline-coated aligned carbon nanotube modified electrode)

REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 17 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:706259 HCAPLUS

DOCUMENT NUMBER: 140:334860

TITLE: Multi-walled carbon nanotubes for the immobilization of enzyme in glucose biosensors

AUTHOR(S): Wang, S. G.; Zhang, Qing; Wang, Ruili; Yoon, S. F.; Ahn, J.; Yang, D. J.; Tian, J. Z.; Li, J. Q.; Zhou, Q.

CORPORATE SOURCE: School of Electrical and Electronic Engineering, Microelectronics Centre, Nanyang Technological University, Singapore, 639798, Singapore

SOURCE: Electrochemistry Communications (2003), 5(9), 800-803
CODEN: ECCMF9; ISSN: 1388-2481

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A novel biosensor, comprised of electrode of gold/multi-walled carbon nanotubes-glucose oxidase (Au/MWNTs-GOD), has been developed. The MWNTs

were produced by microwave plasma enhanced chemical vapor deposition. The enzyme of GOD was immobilized using MWNTs. Performance and characteristics of the fabricated glucose biosensor were assessed with respect to response time, detection limit, pH value and storage stability. The results show that the fabricated biosensor is sensitive and stable in detecting glucose, indicating that MWNTs are a good candidate material for the immobilization of enzyme in glucose biosensor construction.

CC 9-1 (Biochemical Methods)

IT **Nanotubes**

(carbon; gold/multi-walled carbon nanotubes for enzyme immobilization in glucose biosensors)

IT **Glucose sensors**

Immobilization, molecular or cellular

(gold/multi-walled carbon nanotubes for enzyme immobilization in glucose biosensors)

IT **9001-37-0, Glucose oxidase**

RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)

(gold/multi-walled carbon nanotubes for enzyme immobilization in glucose biosensors)

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 18 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:869658 HCAPLUS

DOCUMENT NUMBER: 140:107657

TITLE: A novel multi-walled carbon nanotube-based biosensor for glucose detection

AUTHOR(S): Wang, S. G.; Zhang, Qing; Wang, Ruili; Yoon, S. F.

CORPORATE SOURCE: School of Electrical and Electronic Engineering, Microelectronics Centre, Nanyang Technological University, Singapore, 639798, Singapore

SOURCE: Biochemical and Biophysical Research Communications (2003), 311(3), 572-576

CODEN: BBRC9A; ISSN: 0006-291X

PUBLISHER: Elsevier Science

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The bioelectrochem. characteristics of a novel multi-walled carbon nanotube (MWNT)-based biosensor for glucose detection are studied and compared with those of glassy carbon (GC)-based biosensor. The MWNT-based biosensor exhibits a strong glucose response at applied potentials of 0.65 and 0.45 V vs. Ag/AgCl, resp., while GC-based biosensor shows a weak glucose response at 0.65 V and no response at 0.45 V. Besides, the MWNT-based biosensor shows a high stability of 86.7% of the initial activity to glucose after four-month storage, much higher than 37.2%, the corresponding value for a GC-based biosensor. The detection mechanism of the MWNT-based biosensor is also discussed in detail.

CC 9-7 (Biochemical Methods)

Section cross-reference(s): 6, 7

IT **Nanotubes**

(carbon; multi-walled carbon nanotube-based biosensor for glucose detection)

IT **Glucose sensors**

(multi-walled carbon nanotube-based biosensor for glucose detection)

IT **9001-37-0, Glucose oxidase**

RL: ARU (Analytical role, unclassified); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)

(immobilization; multi-walled carbon nanotube-based biosensor for glucose detection)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 19 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:639047 HCAPLUS

DOCUMENT NUMBER: 138:200949

TITLE: Direct electron transfer of **glucose** oxidase molecules adsorbed onto carbon nanotube powder microelectrode

AUTHOR(S): Zhao, Yuan-Di; Zhang, Wei-De; Chen, Hong; Luo, Qing-Ming

CORPORATE SOURCE: The Key Laboratory of Biomedical Photonics of Ministry of Education, Huazhong University of Science and Technology, Wuhan, 430074, Peop. Rep. China

SOURCE: Analytical Sciences (2002), 18(8), 939-941

CODEN: ANSCEN; ISSN: 0910-6340

PUBLISHER: Japan Society for Analytical Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The electrochem. response of adsorbing glucose oxidase (GOD) at a carbon nanotube (CNT) powder microelectrode was studied. GOD underwent direct electron transfer and had a very reversible redox process at CNT. The adsorption of GOD onto CNT was multilayer, but only the GOD close to the surface contributed to direct electron transfer according to the surface coverage.

CC 7-7 (Enzymes)

ST **glucose** oxidase electron transfer adsorption carbon nanotube

IT **Nanotubes**

(carbon; direct electron transfer of **glucose** oxidase mols. adsorbed onto carbon nanotube powder microelectrode)

IT **Glucose sensors**

(direct electron transfer of **glucose** oxidase mols. adsorbed onto carbon nanotube powder microelectrode)

IT **Microelectrodes**

(enzyme; direct electron transfer of **glucose** oxidase mols. adsorbed onto carbon nanotube powder microelectrode)

IT Enzymes, biological studies

RL: BSU (Biological study, unclassified); BIOL (Biological study) (immobilized; direct electron transfer of **glucose** oxidase mols. adsorbed onto carbon nanotube powder microelectrode)

IT **Enzyme electrodes**

(microelectrodes; direct electron transfer of **glucose** oxidase mols. adsorbed onto carbon nanotube powder microelectrode)

IT 50-99-7, D-**Glucose**, biological studies 9001-37-0, **Glucose** oxidase

RL: BSU (Biological study, unclassified); BIOL (Biological study) (direct electron transfer of **glucose** oxidase mols. adsorbed onto carbon nanotube powder microelectrode)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L126 ANSWER 20 OF 31 MEDLINE on STN

DUPLICATE 2

ACCESSION NUMBER: 2005165060 MEDLINE

DOCUMENT NUMBER: PubMed ID: 15797337

TITLE: A **glucose** biosensor based on electrodeposition of

palladium nanoparticles and **glucose** oxidase onto Nafion-solubilized carbon nanotube electrode.

AUTHOR: Lim San Hua; Wei Ji; Lin Jianyi; Li Qiutian; Kuayou Jin
CORPORATE SOURCE: Department of Physics, National University of Singapore, Singapore 119260, Singapore.
SOURCE: Biosensors & bioelectronics, (2005 May 15) 20 (11) 2341-6. Journal code: 9001289. ISSN: 0956-5663.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: (EVALUATION STUDIES)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200508
ENTRY DATE: Entered STN: 20050331
Last Updated on STN: 20050802
Entered Medline: 20050801

ABSTRACT:

Electrodeposition was used for the co-deposition of **glucose** oxidase (GOx) enzymes and palladium nanoparticles onto a Nafion-solubilized carbon nanotube (CNT) film. The co-deposited Pd-GOx-Nafion CNT bioelectrode retains its biocatalytic activity and offers an efficient oxidation and reduction of the enzymatically liberated H₂O₂, allowing for fast and sensitive ***glucose*** quantification. The combination of Pd-GOx electrodeposition with Nafion-solubilized CNTs enhances the storage time and performance of the sensor. An extra Nafion coating was used to eliminate common interferents such as uric and ascorbic acids. The fabricated Pd-GOx-Nafion CNT **glucose** biosensor exhibits a linear response up to 12 mM **glucose** and a detection limit of 0.15 mM (S/N = 3).

CONTROLLED TERM: *Biosensing Techniques: IS, instrumentation

Biosensing Techniques: MT, methods

*Electrochemistry: IS, instrumentation

Electrochemistry: MT, methods

Electroplating: IS, instrumentation

Electroplating: MT, methods

Enzymes, Immobilized: AN, analysis

Enzymes, Immobilized: CH, chemistry

Equipment Design

Equipment Failure Analysis

*Fluorocarbon Polymers: CH, chemistry

*Glucose: AN, analysis

Glucose: CH, chemistry

Glucose Oxidase: AN, analysis

*Glucose Oxidase: CH, chemistry

Nanotubes: CH, chemistry

Nanotubes: UL, ultrastructure

*Nanotubes, Carbon: CH, chemistry

Nanotubes, Carbon: UL, ultrastructure

*Palladium: CH, chemistry

Solubility

CAS REGISTRY NO.: 39464-59-0 (perfluorosulfonic acid); 50-99-7 (Glucose); 7440-05-3 (Palladium)

CHEMICAL NAME: 0 (Enzymes, Immobilized); 0 (Fluorocarbon Polymers); 0 (Nanotubes, Carbon); EC 1.1.3.4 (Glucose Oxidase)

L126 ANSWER 21 OF 31

MEDLINE on STN

DUPLICATE 5

ACCESSION NUMBER: 2004442717 MEDLINE

DOCUMENT NUMBER: PubMed ID: 15351279

TITLE: **Glucose** biosensor prepared by **glucose** oxidase encapsulated sol-gel and carbon-nanotube-modified basal plane pyrolytic graphite electrode.

AUTHOR: Salimi Abdollah; Compton Richard G; Hallaj Rahman
CORPORATE SOURCE: Department of Chemistry, Kurdistan University, P.O. Box
416, Sanandaj, Iran.. absalimi@yahoo.com
SOURCE: Analytical biochemistry, (2004 Oct 1) 333 (1) 49-56.
Journal code: 0370535. ISSN: 0003-2697.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200503
ENTRY DATE: Entered STN: 20040908
Last Updated on STN: 20050325
Entered Medline: 20050324

ABSTRACT:

A new **glucose** biosensor has been fabricated by immobilizing
glucose oxidase into a sol-gel composite at the surface of a basal
plane pyrolytic graphite (bpgg) electrode modified with multiwall carbon
nanotube. First, the bpgg electrode is subjected to abrasive immobilization of
carbon nanotubes by gently rubbing the electrode surface on a filter paper
supporting the carbon nanotubes. Second, the electrode surface is covered with
a thin film of a sol-gel composite containing encapsulated **glucose**
oxidase. The carbon nanotubes offer excellent electrocatalytic activity toward
reduction and oxidation of hydrogen peroxide liberated in the enzymatic
reaction between **glucose** oxidase and **glucose**, enabling
sensitive determination of **glucose**. The amperometric detection of
glucose is carried out at 0.3 V (vs saturated calomel electrode) in
0.05 M phosphate buffer solution (pH 7.4) with linear response range of 0.2-20
mM **glucose**, sensitivity of 196 nA/mM, and detection limit of 50
microM (S/N=3). The response time of the electrode is < 5s when it is stored
dried at 4 degrees C, the sensor showed almost no change in the analytical
performance after operation for 3 weeks. The present carbon nanotube sol-gel
biocomposite **glucose** oxidase sensor showed excellent properties for
the sensitive determination of **glucose** with good reproducibility,
remarkable stability, and rapid response and in comparison to bulk modified
composite biosensors the amounts of enzyme and carbon nanotube needed for
electrode fabrication are dramatically decreased.

CONTROLLED TERM: *Biosensing Techniques: MT, methods
Electrochemistry: MT, methods
*Enzymes, Immobilized: CH, chemistry
Gels: CH, chemistry
*Glucose: CH, chemistry
*Glucose Oxidase: CH, chemistry
*Graphite: CH, chemistry
Hydrogen Peroxide: CH, chemistry
Hydrogen-Ion Concentration
Nanotechnology: MT, methods
*Nanotubes, Carbon: CH, chemistry
Sensitivity and Specificity

CAS REGISTRY NO.: 50-99-7 (**Glucose**); 7722-84-1 (Hydrogen Peroxide);
7782-42-5 (Graphite)
CHEMICAL NAME: 0 (Enzymes, Immobilized); 0 (Gels); 0 (Nanotubes, Carbon);
EC 1.1.3.4 (**Glucose** Oxidase)

L126 ANSWER 22 OF 31 MEDLINE on STN DUPLICATE 6
ACCESSION NUMBER: 2004004010 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14700233
TITLE: Enzyme-dispersed carbon-nanotube electrodes: a needle
microsensor for monitoring **glucose**.
AUTHOR: Wang Joseph; Musameh Mustafa
CORPORATE SOURCE: Department of Chemistry and Biochemistry, New Mexico State

SOURCE: University, Las Cruces, NM 88003, USA.
Analyst, (2003 Nov) 128 (11) 1382-5.
Journal code: 0372652. ISSN: 0003-2654.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200403
ENTRY DATE: Entered STN: 20040106
Last Updated on STN: 20040316
Entered Medline: 20040315

ABSTRACT:

The preparation of an enzyme-dispersed carbon-nanotube (CNT) electrode, based on mixing **glucose** oxidase (GOx) within CNT, is described. The new binderless biocomposite was packed within a 21-gauge needle and used for amperometric monitoring of **glucose**. The resulting microsensor offers a low-potential highly selective and sensitive detection of **glucose**. The high sensitivity and selectivity are coupled to a wide linear range, prolonged lifetime and oxygen independence. About 80% of the GOx activity is retained during a 24 h thermal stress at 90 degrees C, reflecting the enzyme-stabilization action of CNT. The marked electrocatalytic action towards hydrogen peroxide allows highly selective detection of the **glucose** substrate at -0.1 V (vs. Ag/AgCl) with no interferences from coexisting ascorbic acid, acetaminophen or uric acid. Linearity prevails up to 40 mM *****glucose***** (with analytically useful signals observed up to 0.1 M). Factors affecting the performance of the CNT-based **glucose** biosensor were assessed and optimized. The attractive performance of the new needle electrode offers great promise for continuous monitoring of **glucose** in connection to the management of diabetes, and for the biosensing of other metabolites.

CONTROLLED TERM: Electrochemistry: MT, methods
*Glucose: AN, analysis
Microchemistry
Microelectrodes
Monitoring, Physiologic
Nanotubes, Carbon
Research Support, Non-U.S. Gov't
Research Support, U.S. Gov't, Non-P.H.S.
CAS REGISTRY NO.: 50-99-7 (Glucose)
CHEMICAL NAME: 0 (Nanotubes, Carbon)

L126 ANSWER 23 OF 31 MEDLINE on STN
ACCESSION NUMBER: 2003379275 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12916096
TITLE: Chemical and biochemical sensing with modified single walled carbon nanotubes.
AUTHOR: Davis Jason J; Coleman Karl S; Azamian Bobak R; Bagshaw Claire B; Green Malcolm L H
CORPORATE SOURCE: Inorganic Chemistry Laboratory, University of Oxford South Parks Road, Oxford OX1 3QR, UK.. jason.davis@chem.ox.ac.uk
SOURCE: Chemistry (Weinheim an der Bergstrasse, Germany), (2003 Aug 18) 9 (16) 3732-9.
Journal code: 9513783. ISSN: 0947-6539.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200402
ENTRY DATE: Entered STN: 20030814
Last Updated on STN: 20040203

Entered Medline: 20040202

ABSTRACT:

The nano dimensions, graphitic surface chemistry and electronic properties of single walled carbon nanotubes make such a material an ideal candidate for chemical or biochemical sensing. Carbon nanotubes can be nondestructively oxidized along their sidewalls or ends and subsequently covalently functionalized with colloidal particles or polyamine dendrimers via carboxylate chemistry. Proteins adsorb individually, strongly and noncovalently along nanotube lengths. These nanotube-protein conjugates are readily characterized at the molecular level by atomic force microscopy. Several metalloproteins and enzymes have been bound on both the sidewalls and termini of single walled carbon nanotubes. Though coupling can be controlled, to a degree, through variation of tube oxidative pre-activation chemistry, careful control experiments and observations made by atomic force microscopy suggest that immobilization is strong, physical and does not require covalent bonding. Importantly, in terms of possible device applications, protein attachment appears to occur with retention of native biological structure. Nanotube electrodes exhibit useful voltammetric properties with direct electrical communication possible between a redox-active biomolecule and the delocalized pi system of its carbon nanotube support.

CONTROLLED TERM: Check Tags: Comparative Study
*Biosensing Techniques: IS, instrumentation
Cytochromes c: CH, chemistry
Electrochemistry: MT, methods
Electrons
Glucose Oxidase: CH, chemistry
Microscopy, Atomic Force: MT, methods
Microscopy, Electron, Scanning Transmission: MT, methods
Models, Molecular
Molecular Conformation
*Nanotubes, Carbon: CH, chemistry
Oxidation-Reduction
Research Support, Non-U.S. Gov't
Spectrum Analysis
Surface Properties

CAS REGISTRY NO.: 9007-43-6 (Cytochromes c)
CHEMICAL NAME: 0 (Nanotubes, Carbon); EC 1.1.3.4 (Glucose Oxidase)

L126 ANSWER 24 OF 31 MEDLINE on STN
ACCESSION NUMBER: 2003186240 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12705383
TITLE: Study of carbon nanotubes-HRP modified electrode and its application for novel on-line biosensors.
AUTHOR: Yamamoto Katsunobu; Shi Guoyue; Zhou Tianshu; Xu Fan; Xu Jiming; Kato Takeshi; Jin Ji-Ye; Jin Litong
CORPORATE SOURCE: Laboratory of Research and Development, BAS Inc., 1-36-6, Oshiage, Sumida-Ku, Tokyo, Japan.
SOURCE: Analyst, (2003 Mar) 128 (3) 249-54.
Journal code: 0372652. ISSN: 0003-2654.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200307
ENTRY DATE: Entered STN: 20030423
Last Updated on STN: 20030704
Entered Medline: 20030703

ABSTRACT:

In this paper, multi-walled carbon nanotubes (MWCNTs) were successfully

immobilized on the surface of a glassy carbon electrode by mixing with horse-radish peroxidase (HRP). The electrochemical behavior of H₂O₂ was also studied with the MWCNTs-HRP modified electrode as a working electrode. The MWCNTs-HRP modified electrode showed excellent response of reduction current for the determination of H₂O₂ at the potential of -300 mV (vs. Ag/AgCl). We assembled the MWCNTs-HRP modified electrode in a thin-layer flow cell and the H₂O₂ solution was continuously introduced into the cell with a syringe pump. We optimized the sensitivity of the H₂O₂ sensor by adjusting the working potential and the pH of the buffer solution. The peak current increased linearly with the concentration of H₂O₂ in the range 3.0×10^{-7} to approximately 2.0×10^{-4} mol L⁻¹. The detection limit is 1.0×10^{-7} mol L⁻¹ (S/N = 3). The interferences from ascorbic acid, uric acid and other electroactive substances can be greatly excluded since the sensor can be operated at -300 mV. Stability and reproducibility of the MWCNTs-HRP chemically modified electrode were also studied in this paper. Fabricated with ***glucose*** and lactate oxidase, the MWCNTs-HRP electrode was also applied to prepare the on-line glucose and lactate biosensors because of the high sensitivity for the determination of H₂O₂.

CONTROLLED TERM: ***Biosensing Techniques**
 Electrochemistry: MT, methods
 Flow Injection Analysis
 Glucose: AN, analysis
 Horseradish Peroxidase
 Lactic Acid: AN, analysis
 Nanotubes, Carbon
 Research Support, Non-U.S. Gov't
 CAS REGISTRY NO.: 50-21-5 (Lactic Acid); 50-99-7 (Glucose)
 CHEMICAL NAME: 0 (Nanotubes, Carbon); EC 1.11.1.- (Horseradish Peroxidase)

L126 ANSWER 25 OF 31 MEDLINE on STN
 ACCESSION NUMBER: 2002722892 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 12485767
 TITLE: Novel carbon materials in biosensor systems.
 AUTHOR: Sotiropoulou S; Gavalas V; Vamvakaki V; Chaniotakis N A
 CORPORATE SOURCE: Department of Chemistry, Laboratory of Analytical
 Chemistry, University of Crete, 71 409 Iraklion, Crete,
 Greece.
 SOURCE: Biosensors & bioelectronics, (2003 Mar) 18 (2-3) 211-5.
 Journal code: 9001289. ISSN: 0956-5663.
 PUB. COUNTRY: England: United Kingdom
 DOCUMENT TYPE: (EVALUATION STUDIES)
 Journal; Article; (JOURNAL ARTICLE)
 (VALIDATION STUDIES)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200308
 ENTRY DATE: Entered STN: 20021218
 Last Updated on STN: 20030823
 Entered Medline: 20030822

ABSTRACT:
 In this work, novel carbon materials are evaluated as transducers, stabilizers and mediators for the construction of amperometric biosensors. It is shown that materials such as fullerenes and carbon nanotubes are promising materials as electrochemical mediators and enzyme stabilizers. Additionally porous carbon and porous glassy carbon are excellent transducers for amperometric measurements, while they provide cavities adequate for enzyme immobilization. At the same time, the sensitivity to peroxide is shown to depend on the activation procedures. Treatment that introduces oxygen groups increases the sensitivity of the carbon-based sensor to hydrogen peroxide considerably. These materials are used for the construction, mediation and stabilization of

glucose biosensor.

CONTROLLED TERM: Check Tags: Comparative Study
Adsorption
*Biosensing Techniques: IS, instrumentation
Biosensing Techniques: MT, methods
*Carbon: CH, chemistry
Electrochemistry: IS, instrumentation
Electrochemistry: MT, methods
Enzyme Stability
*Enzymes, Immobilized: CH, chemistry
Fullerenes: CH, chemistry
Glucose: AN, analysis
Glucose Oxidase
*Hydrogen Peroxide: AN, analysis
*Materials Testing: MT, methods
Nanotubes, Carbon: CH, chemistry
Reproducibility of Results
Research Support, Non-U.S. Gov't
Sensitivity and Specificity
CAS REGISTRY NO.: 50-99-7 (Glucose); 7440-44-0 (Carbon); 7722-84-1
(Hydrogen Peroxide)
CHEMICAL NAME: 0 (Enzymes, Immobilized); 0 (Fullerenes); 0 (Nanotubes,
Carbon); EC 1.1.3.4 (Glucose Oxidase)

L126 ANSWER 26 OF 31 MEDLINE on STN
ACCESSION NUMBER: 2002635190 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12392405
TITLE: Bioelectrochemical single-walled carbon nanotubes.
AUTHOR: Azamian Bobak R; Davis Jason J; Coleman Karl S; Bagshaw
Claire B; Green Malcolm L H
CORPORATE SOURCE: Inorganic Chemistry Laboratory, University of Oxford, South
Parks Road, UK.
SOURCE: Journal of the American Chemical Society, (2002 Oct 30) 124
(43) 12664-5.
Journal code: 7503056. ISSN: 0002-7863.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200212
ENTRY DATE: Entered STN: 20021024
Last Updated on STN: 20030102
Entered Medline: 20021231
CONTROLLED TERM: *Cytochrome c Group: CH, chemistry
Electrochemistry
*Enzymes, Immobilized: CH, chemistry
*Ferritin: CH, chemistry
*Glucose Oxidase: CH, chemistry
*Nanotubes, Carbon: CH, chemistry
Research Support, Non-U.S. Gov't
CAS REGISTRY NO.: 9007-73-2 (Ferritin)
CHEMICAL NAME: 0 (Cytochrome c Group); 0 (Enzymes, Immobilized); 0
(Nanotubes, Carbon); EC 1.1.3.4 (Glucose Oxidase)

L126 ANSWER 27 OF 31 EMBASE COPYRIGHT (c) 2005 Elsevier B.V. All rights
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ACCESSION NUMBER: 2004291306 EMBASE
TITLE: Amperometric glucose biosensor based on
adsorption of glucose oxidase at platinum
nanoparticle-modified carbon nanotube electrode.

AUTHOR: Tang H.; Chen J.; Yao S.; Nie L.; Deng G.; Kuang Y.
CORPORATE SOURCE: J. Chen, State Key Lab. Chemo/Biosensing C., Hunan
University, Changsha 410082, China. chenjinhua@hnu.cn
SOURCE: Analytical Biochemistry, (1 Aug 2004) Vol. 331, No. 1, pp.
89-97.
Refs: 37
ISSN: 0003-2697 CODEN: ANBCA2
PUBLISHER IDENT.: S 0003-2697(04)00411-7
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 20040722
Last Updated on STN: 20040722

ABSTRACT: A new amperometric biosensor, based on adsorption of **glucose** oxidase (GOD) at the platinum nanoparticle-modified carbon nanotube (CNT) electrode, is presented in this article. CNTs were grown directly on the graphite substrate. The resulting GOD/Pt/CNT electrode was covered by a thin layer of Nafion to avoid the loss of GOD in determination and to improve the anti-interferent ability. The morphologies and electrochemical performance of the CNT, Pt/CNT, and Nafion/GOD/Pt/CNT electrodes have been investigated by ***scanning*** electron microscopy, cyclic voltammetry, and amperometric methods. The excellent electrocatalytic activity and special three-dimensional structure of the enzyme electrode result in good characteristics such as a large determination range (0.1-13.5mM), a short response time (within 5s), a large current density (1.176mAcm⁻²), and high sensitivity (91mA(-1)cm⁻²) and stability (73.5% remains after 22 days). In addition, effects of pH value, applied potential, electrode construction, and electroactive interferents on the amperometric response of the sensor were investigated and discussed. The reproducibility and applicability to whole blood analysis of the enzyme electrode were also evaluated. .COPYRGT. 2004 Elsevier Inc. All rights reserved.

CONTROLLED TERM: Medical Descriptors:
***amperometric biosensor**
*adsorption
nanoparticle
nanotube
electrode
electrochemical analysis
***scanning electron microscopy**
cyclic potentiometry
amperometry
response time
reproducibility
blood analysis
article
priority journal
Drug Descriptors:
***glucose oxidase**
*platinum
*carbon
graphite

CAS REGISTRY NO.: (**glucose** oxidase) 9001-37-0; (platinum)
7440-06-4; (carbon) 7440-44-0; (graphite) 7782-42-5

L126 ANSWER 28 OF 31 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED.
on STN DUPLICATE 8

ACCESSION NUMBER: 2004-0036986 PASCAL

COPYRIGHT NOTICE: Copyright .COPYRG. 2004 INIST-CNRS. All rights reserved.

TITLE (IN ENGLISH): Carbon **nanotubes** paste **electrode**

AUTHOR: RUBIANES Maria D.; RIVAS Gustavo A.

CORPORATE SOURCE: INFIQC, Departamento de Fisico Quimica, Facultad de Ciencias Quimicas, Universidad Nacional de Cordoba, Ciudad Universitaria, 5000 Cordoba, Argentina

SOURCE: Electrochemistry communications, (2003), 5(8), 689-694, 16 refs.
ISSN: 1388-2481

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: Netherlands

LANGUAGE: English

AVAILABILITY: INIST-26863, 354000119487500130

ABSTRACT: The performance of carbon **nanotubes** paste **electrodes** (CNTPE) prepared by dispersion of multi-wall carbon **nanotubes** (MWNT) within mineral oil is described. The resulting **electrode** shows an excellent electrocatalytic activity toward ascorbic acid, uric acid, dopamine, 3,4-dihydroxyphenylacetic acid (dopac) and **hydrogen** peroxide. These properties permit an important decrease in the overvoltage for the oxidation of ascorbic acid (230 mV), uric acid (160 mV) and **hydrogen** peroxide (300 mV) as well as a dramatic improvement in the reversibility of the redox behavior of dopamine and dopac, in comparison with the classical carbon (graphite) paste **electrodes** (CPE). The substantial decrease in the overvoltage of the **hydrogen** peroxide reduction (400 mV) associated with a successful incorporation of **glucose oxidase** (GOx) into the composite material, allow the development of a highly selective and **sensitive glucose** biosensor without using any metal, redox mediator or anti-interference membrane. No interference was observed at -0.100 V even for large excess of ascorbic acid, uric acid and acetaminophen. A linear response up to 30 mM (5.40 g l.sup.-.sup.1) glucose with a detection limit of 0.6 mM (0.11 g l.sup.-.sup.1) were obtained with the CNTPE modified with 10% w/w GOx. Such an excellent performance of CNTPE toward **hydrogen** peroxide, represents a very good alternative for developing other enzymatic biosensors.

CLASSIFICATION CODE: 001C01H02A; Chemistry; General chemistry, Physical chemistry; Electrochemistry
002A31C09B; Life sciences; Biological sciences; Biotechnology
215; Biotechnology

CONTROLLED TERM: Biosensor; Ion selective **electrode**; Enzyme **electrode**; **Glucose oxidase**
; Paste **electrode**; Carbon **nanotubes**
; Modified material; Glucose; Chronopotentiometry

BROADER TERM: Oxidoreductases; Enzyme

L126 ANSWER 29 OF 31 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

ACCESSION NUMBER: 2005-18335 BIOTECHDS

TITLE: **Glucose sensor** comprises apparatus

comprising metallic single-walled carbon **nanotubes** arranged and configured to define interstitial space(s) for sorption of **hydrogen gas**;
a biosensor for the detection and analysis of **glucose** using a **glucose-oxidase** enzyme **electrode**

AUTHOR: LEE J; CHUNG J; LEE K
PATENT ASSIGNEE: LEE J; CHUNG J; LEE K
PATENT INFO: US 2005124020 9 Jun 2005
APPLICATION INFO: US 2003-729854 5 Dec 2003
PRIORITY INFO: US 2003-729854 5 Dec 2003; US 2003-729854 5 Dec 2003
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2005-416999 [42]
ABSTRACT: DERWENT ABSTRACT:

NOVELTY - A **glucose sensor** comprising apparatus having metallic single-walled carbon **nanotubes** arranged and configured to define interstitial space(s) for sorption of **hydrogen gas**, the **nanotube(s)** being positioned across and in electrical contact with an **electrode** pair; and **glucose oxidase** component contacting the **nanotubes**, is new.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for using a metallic single-walled carbon **nanotubes** to determine **glucose** concentration, comprising providing metallic single-walled carbon **nanotubes** defining interstitial space(s), the **nanotube(s)** being positioned across an **electrode** pair, having electrical resistance, and a **glucose oxidase** component; introducing **glucose** to the **glucose oxidase** component; applying current across the **electrode** pair at least partially sufficient to produce **hydrogen gas**; and determining a change in the resistance upon the **glucose** introduction.

USE - For **sensing glucose** (claimed).

ADVANTAGE - The single-walled carbon **nanotubes** are configured such that the interstitial spaces or sites can be used to sense or detect **hydrogen gas** in conjunction with the presence of **glucose**. The **sensor** measures or monitors **glucose** levels quickly at clinically-significant levels. (13 pages)

CLASSIFICATION: BIOINFORMATICS and ANALYSIS, Biosensors; BIOMANUFACTURING and BIOCATALYSIS, Biocatalyst Application
CONTROLLED TERMS: BIOSENSOR, **GLUCOSE-OXIDASE**, MICROBIAL **ELECTRODE**, ENZYME **ELECTRODE**, CARBON **NANOTUBE**, APPL., **GLUCOSE ANALYSIS ENZYME**
EC-1.1.3.4 SUGAR (24, 30)

L126 ANSWER 30 OF 31 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2005:470378 SCISEARCH

THE GENUINE ARTICLE: 914HP

TITLE: Cast thin film biosensor design based on a nafion backbone, a multiwalled carbon **nanotube** conduit, and a **glucose oxidase** function

AUTHOR: Tsai Y C (Reprint); Li S C; Chen J M

CORPORATE SOURCE: Natl Chung Hsing Univ, Dept Chem Engrn, Taichung 402, Taiwan (Reprint)

yctsai@dragon.nchu.edu.tw
 COUNTRY OF AUTHOR: Taiwan
 SOURCE: LANGMUIR, (12 APR 2005) Vol. 21, No. 8, pp. 3653-3658.
 ISSN: 0743-7463.
 PUBLISHER: AMER CHEMICAL SOC, 1155 16TH ST, NW, WASHINGTON, DC 20036
 USA.
 DOCUMENT TYPE: Article; Journal
 LANGUAGE: English
 REFERENCE COUNT: 37
 ENTRY DATE: Entered STN: 12 May 2005
 Last Updated on STN: 12 May 2005

ABSTRACT:

Novel electroanalytical sensing nanobiocomposite materials are reported. These materials are prepared by mixing multiwalled carbon **nanotubes** (MWNTs), a Nafion cation exchanger, and **glucose oxidase** (GOD) in appropriate amounts. The MWNTs are cylindrical with a diameter in the range 40-60 nm and with a length of up to several micrometers, and they provide electrical conductivity. Nafion acts as a polymer backbone to give stable and homogeneous cast thin films. Both MWNTs and Nafion provide negative functionalities to bind to positively charged redox enzymes such as *****glucose*** oxidase**. The resulting biosensing composite material is inexpensive, reliable, and easy to use. The homogeneity of the MWNT-Nafion-GOD nanobiocomposite films was characterized by atomic force microscopy (AFM). Amperometric transducers fabricated with these materials were characterized electrochemically using cyclic voltammetry and amperometry in the presence of **hydrogen** peroxide and in the presence of glucose. Their linear response to **hydrogen** peroxide was demonstrated. The *****glucose*** biosensor sensitivity** was strongly influenced by the *****glucose*** oxidase** concentration within the nanobiocomposite film. The optimized glucose biosensor (2.5 mg/mL GOD) displayed a sensitivity of 330 nA/mM, a linear range of up to 2 mM, a detection limit of 4 μ M, and a response time of < 3 s.

CATEGORY: CHEMISTRY, PHYSICAL

SUPPL. TERM PLUS: **HYDROGEN-PEROXIDE; ELECTRODE;**
 IMMOBILIZATION; COMPOSITE; OXIDATION; SENSOR; PH

REFERENCE(S):

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	ARN PG (RPG)	Referenced Work (RWK)
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AJAYAN P M	1999	99	1787	CHEM REV
ALEGRET S	1996	11	35	BIOSENS BIOELECTRON
BADEA M	2003	18	689	BIOSENS BIOELECTRON
BANKS C E	2004	16	1804	CHEM COMMUN
BAUGHMAN R H	1999	284	1340	SCIENCE
BESTEMAN K	2003	3	727	NANO LETT
DEBETONO S F	1999	20	621	J PHARMACEUT BIOMED
DEGRAND C	1996	14	1343	J PHARMACEUT BIOMED
DEHEER W A	1995	270	1179	SCIENCE
EGGINS B R	2002		100	CHEM SENSORS BIOSENS
ELMGREN M	1993	362	227	J ELECTROANAL CHEM
FABIANO S	2002	21	61	MAT SCI ENG C-BIO S
FOULDS N C	1988	60	2473	ANAL CHEM
HU S S	2002	464	209	ANAL CHIM ACTA
KAZANDJIAN R Z	1985	107	5448	J AM CHEM SOC
KHAN G F	1992	64	1254	ANAL CHEM
KIM M A	2003	479	143	ANAL CHIM ACTA
LI Z	2003	558	155	J ELECTROANAL CHEM
LIN Y H	2004	4	191	NANO LETT
MOORE R R	2004	76	2677	ANAL CHEM
PIRO B	2001	512	101	J ELECTROANAL CHEM

RAMANATHAN K	1995	3	159	MAT SCI ENG C-BIO S
RAZOLA S S	2002	17	921	BIOSENS BIOELECTRON
SHIN M C	1996	11	161	BIOSENS BIOELECTRON
SLESZYNSKI N	1984	56	130	ANAL CHEM
TANG H	2004	331	89	ANAL BIOCHEM
TATSUMA T	1992	64	1183	ANAL CHEM
TSAI Y C	2004	6	917	ELECTROCHEM COMMUN
VIDAL J C	1999	57	219	SENSOR ACTUAT B-CHEM
VREEKE M	1992	64	3084	ANAL CHEM
WANG J	2001	13	1153	ELECTROANAL
WILDGOOSE G G	2004	5	669	CHEMPHYSCHEM
WONG S S	1998	394	52	NATURE
WU F H	2002	4	690	ELECTROCHEM COMMUN
WU G	2001	10	160	CHIN J REACT POLYM
ZEN J M	1999	396	39	ANAL CHIM ACTA
ZHAO Q	2002	14	1609	ELECTROANAL

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ABSTRACT:

A review with 95 references is given on the applications of carbon *****nanotubes***** in analytical chemistry. The use of carbon *****nanotubes***** as tip of scanning microscopy, materials of **gas** sensors, modified **electrode**, **gas** chromatographic packing materials and detector of liquid chromatography is mainly discussed.

CATEGORY: CHEMISTRY, ANALYTICAL

SUPPLEMENTARY TERM: carbon **nanotubes**; tip of scanning microscopy; **gas** sensors; chemically modified **electrode**; review

SUPPL. TERM PLUS: SCANNING PROBE MICROSCOPY; DIRECT ELECTRON-TRANSFER; DIRECT ELECTROCHEMICAL OXIDATION; CHEMICAL-VAPOR-DEPOSITION; ASCORBIC-ACID; ELECTROCATALYTIC OXIDATION; CYTOCHROME-C; **GLUCOSE-OXIDASE**; DIRECT GROWTH; **GAS** SENSORS

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Referenced Author (RAU)	Year (RPY)	VOL (RVL)	ARN PG (RPG)	Referenced Work (RWK)
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ANON	1998	67	1	APPL PHYS A
AGO H	1999	103	8116	J PHYS CHEM B

AJAYAN P M	1999	99	1787	CHEM REV
AZAMIAN B R	2002	124	12664	J AM CHEM SOC
BAO J C	2002	14	1483	ADV MATER
BARISCI J N	2000	488	92	J ELECTROANAL CHEM
BARISCI J N	2000	147	4580	J ELECTROCHEM SOC
BRITTO P J	1999	11	154	ADV MATER
BRITTO P J	1996	41	121	BIOELECTROCH BIOENER
CAI C X	2004	325	285	ANAL BIOCHEM
CAMPBELL J K	1999	121	3779	J AM CHEM SOC
CAPONE S	1999	15	1748	LANGMUIR
CHE G L	1998	393	346	NATURE
CHEN J	2003	14	1171	CHINESE CHEM LETT
CHEN J				IN PRESS ANAL CHIM A
CHENG H M	2002			CARBON NANOTUBES SYN
CHEN J	2004	22	167	CHINESE J CHEM
CHENG F L	2003	21	436	CHINESE J CHEM
CHEN J	2003	21	665	CHINESE J CHEM
CHEN J				IN PRESS CHINESE CHE
CHEUNG C L	2000	76	3136	APPL PHYS LETT
CHEUNG C L	2000	97	3809	P NATL ACAD SCI USA
COLBERT D T	1994	266	1218	SCIENCE
COLLINS P G	2000	287	1801	SCIENCE
DAI H J	1996	384	147	NATURE
DAI H J	1998	73	1508	APPL PHYS LETT
DAI H J	2002	500	218	SURF SCI
DAVIS J J	1997	440	279	J ELECTROANAL CHEM
DELZEIT L	2002	106	5629	J PHYS CHEM B
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DRESSELHAUS M S	2001			CARBON NANOTUBES
EBBESEN T W	1996	49	26	PHYS TODAY
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GU Y	2002			FUNDAMENTALS MAT SCI
GUISEPPIELIE A	2002	13	559	NANOTECHNOLOGY
GUO L Q	2002	4	36	COMMUN HIGH TECH
GUO L Q	2002	31	164	J SYNTHETIC CRYSTALS
HAFNER J H	1998	296	195	CHEM PHYS LETT
HAFNER J H	1999	398	761	NATURE
HAFNER J H	1999	121	9750	J AM CHEM SOC
IIJMA S	1991	354	56	NATURE
JHI S H	2000	85	1710	PHYS REV LETT
KIANG C H	1995	33	903	CARBON
KONG J	2000	287	622	SCIENCE
KRISHNAN A	1998	58	14013	PHYS REV B
LAGO R M	1995		1355	J CHEM SOC CHEM COMM
LI J	2002	106	9299	J PHYS CHEM B
LI Q L	2002	60	1876	ACTA CHIM SINICA
LIN L	2003	22	6	J INSTRUMENTAL ANAL
LIN L	2003	31	261	CHINESE J ANAL CHEM
LIU C L	2002	30	1	INT J APPROX REASON
LIU C Y	1999	2	577	ELECTROCHEM SOLID ST
LIU P F	2002	84	194	SENSOR ACTUAT B-CHEM
LIU Z	2000	16	2569	LANGMUIR
LUO H X	2001	73	915	ANAL CHEM
LUO H X	2000	21	1372	CHEM J CHINESE U
MANDELIS A	1993			PHYS CHEM TECHNOLOGY
MCCONNELL H M	1992	257	1906	SCIENCE
MEYYAPPAN M	2000		16	IEEE POTENTIALS
MIASIK J J	1986	82	1117	J CHEM SOC FARAD T 1
MUSAMEH M	2002	4	743	ELECTROCHEM COMMUN
NAN X L	2001	17	393	ACTA PHYS-CHIM SIN

NISHIJIMA H	1999	74	4061	APPL PHYS LETT
ODOM T W	1998	391	62	NATURE
ONG K G	2002	2	82	IEEE SENS J
RAO C N R	1996		1525	J CHEM SOC CHEM COMM
SAITO R	1998			PHYS PROPERTIES CARB
SAITO R	1992	60	2204	APPL PHYS LETT
SANO M	2001	293	1299	SCIENCE
SUMANASEKERA G U	1999	103	4292	J PHYS CHEM B
TAKAO Y	1994	141	1028	J ELECTROCHEM SOC
THESS A	1996	273	483	SCIENCE
WANG Z H	2002	30	1053	CHINESE J ANAL CHEM
WANG G	2002	4	506	ELECTROCHEM COMMUN
WANG Z H	2003	31	1004	CHINESE J ANAL CHEM
WANG J X	2002	14	225	ELECTROANAL
WANG Z H	2002	127	1353	ANALYST
WANG J X	2002	74	1993	ANAL CHEM
WANG Z H	2002	127	653	ANALYST
WANG J	2003	125	2408	J AM CHEM SOC
WANG Z H	2003	24	811	CHEM J CHINESE U
WANG Z H	2003	540	129	J ELECTROANAL CHEM
WANG Z H	2003	24	236	CHEM J CHINESE U
WILDOER J W G	1998	391	59	NATURE
WONG S S	1998	120	603	J AM CHEM SOC
WONG S S	1998	73	3465	APPL PHYS LETT
WONG S S	1998	394	52	NATURE
WU F H	2002	4	690	ELECTROCHEM COMMUN
XU J Z	2003	21	1088	CHINESE J CHEM
YANG X	2000	7	527	EARTH SCI FRONTIER
ZHAO T Q	2002	29	176	PROG BIOCHEM BIOPHYS
ZHU H W	2003			CARBON NANOTUBES
ZHU S W	2000	31	119	J FUNCTIONAL MAT
ZHU H W	2002	296	884	SCIENCE

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